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ABSTRACT

Papers on applied linguistics and language pedagogy include: "A Genre Analysis Study of 80 Medical Abstracts" (Kenneth Anderson, Joan Maclean); "Oral Classroom Testing in an Adult French Community Class" (Sheena Davies, Aileen Irvine, Jacqueline Larrieu); "Whose Relevance? Interpretation of Hybrid Texts by a Multiple Audience" (Katalin Egri Ku-Mesu); "Talking the Test: Using Verbal Report Data in Looking at the Process of Cloze Tasks" (Bob Gibson); "Managing Distances: Discourse Strategies of a TV Talk Show Host" (Fumi Morizumi); "Lexical Processing in Uneven Bilinguals: An Exploration of Spanish-English Activation in Form and Meaning" (Carmen Santos Maldonado); and "Japanese Learners' Acquisition and Use of the English Article System" (Toshiaki Takahashi). (MSE)

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Preface

EWPAL provides an annual update on some of the work being carried out in applied linguistics and language pedagogy by students and staff of the Department of Applied Linguistics and the Institute for Applied Language Studies at the University of Edinburgh. This year there are two papers by IALS staff, three by PhD students in the Department, and two by Japanese research students spending a year at the Department as part of their programme of study for doctoral degrees at their home universities.

The wide range of topics covered in this issue is self-evident from the contents page. It is gratifying to note that EWPAL 8 also reflects the increasing amount of work being done in the Department and the Institute on languages other than English, as well as on 'other Englishes'.

In my first year as main editor I have been very dependent on Brian Parkinson's knowledge and experience gained from editing previous issues: I with to thank him for his patience in answering my many calls for help and guidance. I also record my appreciation of the work of those who kindly agreed to comment on the papers submitted: Cathy Benson, Elizabeth Black, Joan Cutting, Gibson Ferguson, Eric Glendinning, Jacqueline Gollin, Tony Howatt, John Joseph, Joan Maclean, Brian Parkinson, Antonella Sorace and Hugh Trappes-Lomax.

Thanks also go to Michele Bain for turning contributors' final versions into these published papers, and to Alan White and his colleagues at the University Printing Office, who have been responsible for the final stage of production.

Keith Mitchell

May 1997

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A GENRE ANALYSIS STUDY OF 80 MEDICAL ABSTRACTS

Kenneth Anderson and Joan Maclean (IALS)

Abstract

ESP practitioners need to be confident that the genre descriptions we offer to our students enable them to exploit as fully as possible the range of rhetorical options characteristic of their particular disciplines. One of the most comprehensive genre-based pedagogical accounts of the scientific research article currently on the market is the popular Writing Up Research *(Weissberg and Buker, 1990). To determine how suitable this material would be for writers of abstracts in medical science, we compared the description of abstracts offered in the book with a sample of 80 abstracts drawn from 4 fields of medicine. We found that on the whole there was a match between the specifications and the abstracts, but that the textbook was overly rigid and simplistic. The relationship between information structure and linguistic elements is typically more complex than implied in the book. The specifications for sections introducing purpose ignore some very frequent lexical signals; methods tend to be amalgamated into adjacent sections; and it is not always necessary to conclude with a generalisation. While we detected no systematic differences between abstracts published in British and North American journals, we found some evidence that, even within medical science, conventions vary according to field or type of research design.*

1. Introduction

Genre analysis has proved a welcome resource in the design of EAP/ESP materials. Writing Up Research by Weissberg and Buker (1990) is an innovative and popular genre-based textbook, specifically focused on writing experimental research reports, but claiming to be applicable across a wide variety of disciplines. It contains one unit on writing abstracts. The unit presents an information structure model:

(B)	Background (optional)
P	Purpose
M	Method
R	Results
C	Conclusion.

It also specifies typical linguistic signals, such as tenses, for the different parts of the abstract. The example texts are drawn from many fields but not, as it happens, medicine.

The other major recent publication in this area is Swales and Feak (1994). This book is also an EAP textbook for students from a wide variety of disciplines, but covers a wider range of text types than Weissberg and Buker. It contains two units on research papers, including a few pages on abstracts. Its treatment of abstracts is therefore less comprehensive, but, interestingly, the authors take a less prescriptive approach.

In spite of the importance of abstract writing in medicine, there are, so far as we are aware, no published course materials specifically for non-native writers of medical abstracts. The International Committee of Medical Journal Editors, however, has published specifications for writing research reports (*Uniform Requirements for Manuscripts Submitted to Biomedical Journals*, 1993) which includes a paragraph on abstracts. The impressively detailed course book by Zeiger (1991), which contains 1 unit (26 pages) on writing abstracts, is for biomedical writers in general, not specifically nonnative writers. Zeiger is openly prescriptive. She is an experienced editor of biomedical papers and abstracts, and as such is a controller of the genre.

The genre analysis approach in applied linguistics is very different, being an almost ethnographic description of linguistic conventions in another (in this case medical research) community. Since Swales's analysis of research article introductions in 1981, there has been a flow of interesting studies of research writing. The focus of interest has been on the introduction (e.g. Swales 1990) and discussion (e.g. Hopkins and Dudley-Evans 1988) sections of the article, metalanguage (e.g. Mauranen 1993) and language choices in making citations (e.g. Oster 1981). For abstracts, the work most immediately relevant to the current study is by Salager-Meyer (1990a, 1990b).

Salager-Meyer (1990a) analysed 77 medical abstracts in order to establish the linguistic realisations of their moves. She included in her sample only abstracts that met the criterion of well-structuredness, which she defined as containing at least the four moves: purpose, method, results and conclusion. Her findings concerning the frequency of linguistic expressions in each move are valuable, but our concern is not just with the well-structured abstract but with abstracts as they are.

In a related study Salager-Meyer (1990b) investigated the extent to which medical abstracts are well-structured. Well-structuredness was this time defined as (1) containing all four moves, as above, (2) having all four moves "in their logical order", i.e. in the standard P M R C sequence and (3) no conceptual overlapping between paragraphs (in abstracts containing more than one paragraph). Only 29 of 47 research report abstracts were considered to be well-structured (62%). This is a high threshold of well-structuredness. Some medical professionals are concerned about the quality of abstracts (e.g. Taddio, 1994). However, to reject so many abstracts considered suitable for publication must bias a description of the genre characteristics.

We looked at 80 medical abstracts to see to what extent they conformed to Weissberg and Buker's specifications. Inevitably this involved a process of categorisation of elements of texts, but we were less interested in trying to establish a set of categories in order to see how reliably these could be applied in analysis (cf. Crookes 1986) than in discovering more about the rhetorical options favoured by writers of medical abstracts.

2. Data and Procedure

We confined our study to "unstructured" abstracts of results-focused papers in the field of medicine. That is, we did not consider conference abstracts or "methods" abstracts, i.e. abstracts presenting a completely new method or machine. We looked at a cross-section of abstracts: 20 from each of the major fields of medicine (clinical medicine, surgery, epidemiology and basic sciences). In case of differences between British and North American journals, in each field we looked at 10 from a British journal and 10 from a North American journal.

We had hoped to include a contrast between abstracts in journals for the general medical reader (such as *The Lancet and the New England Journal of Medicine*) and those in specialist journals but, interestingly, found that the main general medical journals have now converted to structured or semi-structured abstracts, and so were not eligible for this study.

We took the position that abstracts which have been accepted for publication are acceptably formed abstracts. We therefore did not screen out abstracts written by non-native authors.

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We downloaded from Medline (an on-line data-base) consecutive runs of abstracts (year 1995) from 8 journals (4 British and 4 North American) held in the University library, so that we could if necessary consult the articles themselves. The journals were:

British	*North American*
British Journal of Clinical Practice	American Journal of Clinical Nutrition
British Journal of Surgery	Journal of Thoracic and Cardiovascular Surgery
Public Health	American Journal of Epidemiology
Biochemical Journal	Archives of Biochemistry and Biophysics

We first separately, then together, analysed the abstracts looking for the principal elements as described in Weissberg and Buker (1990). A few abstracts were immediately discarded as not being results-focused: 2 were methods-focused, 2 were argumentative (about data presentation), and one was a narrative report of a public health investigation. Discarded abstracts were replaced by the next results-focused abstract in the sequence down-loaded from Medline.

References for the abstracts studied are available on request from the authors. They are coded in our report as Clin 1-20 (clinical medicine) Surg 1-20 (surgery), Epi 1-20 (epidemiology) and Bio 1-20 (biochemistry). Because we could find no convincing differences between the British and North American journal abstracts we dropped the UK/US part of the code; however abstracts numbered 1-10 are from British journals and those numbered 11-20 are from North American journals.

We then started on the cyclical process of identifying and defining our categories of analysis. We started by looking for the elements (B) P M R C as defined in Weissberg and Buker (1990). When we had difficulties in applying these categories to our data, these difficulties were analysed. During this process we made frequent reference to Swales and Feak (1994), Zeiger (1991) and the International Committee of Medical Journal Editors (1993).

3. Analysis

We report our analysis under three headings:

analysis of the Purpose element

analysis of the Methods and Results elements

analysis of the Conclusion element

3.1 Analysis of the Purpose element

One feature of the Weissberg and Buker model which we had found caused confusion in the classroom is the second element they identify, labelled 'P', which is sometimes glossed (1990: 185, 187) as 'purpose'. The following is given as an example of 'P+M = purpose and method of the study':

> To determine the understandability of individual income-tax booklets, a Reading Ease score was calculated for the 1977 Federal income tax form 1040 and tax forms of the nine south-eastern states. (Weissberg and Buker, 1996: 188)

We assume this corresponds to Zeiger's categories *Question* and *What was done* (1991: 257):

> *[Question]* To determine whether pulmonary venous flow and mitral inflow assessed less invasively, by transesophageal pulsed Doppler echocardiography, accurately estimate mean left atrial pressure, *[What was done]* we prospectively studied 27 consecutive patients undergoing cardiovascular surgery. (Zeiger, 1991: 258)

Syntactic signals of Purpose

In these examples, Purpose (or 'Question') is signalled by a non-finite 'to + INFINITIVE' clause. We found this in 17 of our 80 abstracts.

The main clause, in such cases, is a statement of the means employed to achieve the purpose, i.e. Weissberg and Buker's 'method' ('M') element (Zeiger's *What was done*). 'To' clauses of purpose are syntactically adjuncts, which allows the Purpose element either to precede the Methods statement, or to follow it. As Bhatia points out (1993: 90), placing the purpose clause first conforms to the 'logical' information sequence. The alternative option of fronting the main clause, however, was equally common in our corpus. Reasons for this choice are not always clear, but in cases such as the following it appears that the general topic area (here, breast cancer treatment) is introduced via the main clause, while the 'to' clause indicates the specific aspect in focus:

> A five-year cohort of patients treated 15 - 17 years previously for breast cancer was studied to establish the prevalence of symptoms and objective evidence of circulatory insufficiency in the upper limbs. (Surg 2)

Finally, an alternative (finite) subordinate clause equivalent to the 'to' clauses was used in only one abstract:

> So that changes in production and binding of tumor necrosis factor-alpha during postpneumonectomy lung growth could be determined, rats underwent left lung resection and were killed 3, 7 or 14 days later. (Surg 11)

Lexical purpose signals: subject noun-phrases in 'purpose sentences'

In 8 further cases, non-finite 'to' clauses occurred as copulative complement in 'identifying be' clauses forming separate 'purpose sentences'. In these cases, the subject noun phrase typically drew on a predictable and very restricted repertoire of 'purpose' lexis (underlined):

> The purpose of this study was to examine the early and late results in 60 patients who underwent 28 (47%) bioprosthetic and 32 (53%) mechanical tricuspid valve replacements. (Surg 16)

> The aim of this study was to examine critically the accuracy of self-reported data in describing the prevalence of overweight in Wales. (Epi 2)

> The objective of this study is to determine the reasons for non-response in both phases of the Shetland Health Study. (Epi 3)

> Our objective was to measure cytochrome oxidase and copper-zinc superoxide dismutase activities in mononuclear cells, neutrophils, and erythrocytes of adolescents with cystic fibrosis, as well as plasma copper and ceruloplasmin. (Clin 11)

There was one example only of an alternative type of 'purpose sentence', in which a 'to' clause occurred as a 'catenative' complement of a lexical verb, *designed*; here it is this verb, rather than subject NP, which carried the semantic load of signalling purpose:

> This study was designed to determine whether intermittent warm aortic crossclamping induces cumulative myocardial stunning or if the myocardium becomes preconditioned after the first episode of ischemia in canine models in vivo. (Surg 12)

Two thirds of these 'purpose sentences' followed initial *background* elements. Interestingly, while purpose sentences of this type were evenly distributed in the three other fields, this way of indicating purpose was not used in any of the abstracts from the biochemistry journals. As we shall see, one of the most distinctive characteristics of biochemical abstracts is the multiplicity of methods and results detail that has to be given. The brevity requirement results in an extremely dense packaging of information, in which the use of a whole sentence for purpose when more economical alternatives exist, is, we suppose, an unaffordable luxury. (Incidentally, we have seen no examples at all of the style recommended by Zeiger for introducing the 'Question' in a separate sentence from 'What was done': *We asked whether ...*)

'Principal activity' and 'scope': Purpose or Method?

The above syntactic and lexical *purpose* signals, which we found in one third (27) of the abstracts, are of course very familiar and unambiguous. There is inconsistency, however, in the way Weissberg and Buker (1990) describe the 'P' element in their scheme: while this is sometimes (pages 185, 187) simply 'purpose', it is alternatively referred to (page 192) as 'principal activity', or (page 186) 'the *principal activity* (or purpose) of the study and its *scope*'. In class we and our students had found this inconsistency somewhat confusing, and we suspected it might point to an area of complexity in the rhetorical options which we hoped our investigation might illuminate.

As we saw above in our discussion of 'to' purpose-clauses, the main clause in such cases describes, often at a somewhat general level, what procedure was adopted to achieve the goal. Such material was analysed, in Weissberg and Buker's terms, as 'Method', though the phrases 'Principal activity ... and Scope', included with Purpose as a single rhetorical element (P), would seem equally appropriate:

> To determine the incidence rate of serious ulcer disease among users and nonusers of nonsteroidal anti-inflammatory drugs (NSAIDs), a retrospective cohort study was done on 103,954 elderly Tennessee Medicaid recipients with 209,068 person-years of follow-up from 1984 to 1986. (Epi 17)

'Scope' seems intended to refer to parameters such as definition of the sample or period of the study, and is regularly expressed in prepositional phrases in sentences which very often contain Purpose elements together with general statements about Method. These phrases function to inform the reader of important aspects of procedure, rather than overall objectives, and is conventionally located in the Methods sections of Research Articles; we argue that they should be analysed as belonging to the *method* element in abstracts, rather than to the same 'P' element as Purpose. In the following examples we have underlined what we consider to be Method, and double-underlined 'scope' elements:

> To test the hypothesis that endogenous opiate peptides selectively influence hedonic response to sweet and high-fat foods, the opiate antagonist naloxone, opiate agonist butorphanol, and a

> saline placebo were administered by intravenous infusion to 16 obese and 25 normal-weight women.
> (Clin 6)

> To examine clinical practice in relation to HRT, especially in patients with hypertension, and to canvass opinions on potential or perceived side-effects, the authors conducted a postal survey of HRT prescribing habits among 285 GPs, physicians and obstetricians in the West Midlands.
> (Clin 9)

> Experience of such injuries between 1991 and 1994 was reviewed. (Surg 4)

So far we believe we have been able to classify segments of material as either clearly Purpose or clearly Method. However, we found that deciding what did and what did not constitute a statement of 'purpose' was not always so straightforward. Although overt 'purpose' expressions of the types described above were present in only a third of our abstracts, we felt that corresponding parts of the other texts actually performed a very similar - if not identical - function. None of the formal properties listed above, for example, are present in:

> This study assesses the feasibility and toxicity of adoptive immunotherapy with tumor infiltrating lymphocytes and recombinant interleukin-2 in 29 patients who underwent resection for stage III non-small-cell lung cancer. (Surg 15)

It would be perverse, however, to argue that this sentence's rhetorical function was in any way different from that of:

> The objective of this study was to assess the value of domiciliary consultations carried out by two hospital physicians for care of the elderly, using the resulting admission rates as one of the criteria. (Epi 7)

Moreover, some of the sentences in which the purpose function was 'obliquely' expressed contained information (about the sample) and syntactic characteristics (passive clauses) which are typically associated with statements of Method (see below), rather than Purpose:

> The feasibility for placement of endovascular grafts was assessed in 44 consecutive patients admitted for transabdominal AAA repair. (Surg 5)

This raised a difficulty in defining criteria for distinguishing Purpose from Method elements, a boundary we had not expected to be problematic. This is presumably why Weissberg and Buker seem hesitant to apply the term Purpose to the following sentence, which is an example of 'P' - here '*principal activity* (or purpose) of the study and its *scope*' - in one of their sample texts:

> As part of an effort to understand the origins of this behaviour pattern, the present study assessed the impact of performance standards on the social behaviour of Type A and Type B children. (Matthews and Segal, 1983: 135, cited in Weissberg and Buker, 1990: 186)

The presence of the verb *assess* in all four of the above examples, of course, helps emphasise their similarity, but is not simply a convenient coincidence. We identified 36 abstract segments which we felt performed the function of indicating purpose but were not signalled by any of the unambiguous syntactic or lexical means; in nine (25%) of these the main verb was either *assess* or its semantic neighbour *evaluate* - verbs which also appeared in five of the 27 'clear' purpose statements.

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Lexical signals of Purpose: verbs

In fact, a small set of verbs seem to occur with fairly high frequency to realise the notion of 'purpose' (or 'aim', etc.), rather than to inform about methodological procedures, whether with or without the more overt signals of purpose (*the aim of ... is ... to ...*) referred to above. Six verbs each occurred five times or more in the data either in first sentences or immediately following Background sentences: *examine* (x 9), *assess* (x 8), *study* (x 6), *evaluate* (x 6), *determine* (x 5) *test* (x 5). There were 3 instances of *compare* in what we considered to be Purpose than rather Method contexts, and 3 other verbs occurred twice: *establish*, *identify*, *investigate*. The following were attested only once: *elucidate*, *measure*, *look for*, *explore*.

This group of verbs corresponds roughly to the 'verbal teleological imports' identified by Salager-Meyer (1990a: 113), though she includes verbs such as *review*, *carry out*, *perform*, *undertake* and *send*, which we would argue are used to identify the procedures adopted (i.e. Method), and not the purpose.

It should be noted that the verbs we have identified as signals of Purpose also turn up in sections of the abstracts that are clearly about the methodology rather than the overall objectives:

> A 5-year cohort of patients treated 15-19 years previously for breast cancer was studied to establish the prevalence of symptoms and objective evidence of circulatory insufficiency in the upper limbs. There were 187 survivors of the original cohort of 665. In all, 102 patients were evaluated; 50 had received radiotherapy in addition to surgery. Irradiated and non-irradiated groups were comparable for age, extent of axillary dissection and vascular risk factors. Both arms were assessed for symptoms and examined by Doppler ultrasonographically derived segmental pressures and hyperaemia testing, Doppler ultrasonographic waveform analysis, pulse volume recording and venous outflow air plethysmography. (Surg 2)

The presence of one of these verbs does not of itself invariably signal a Purpose element. However, we would argue that, in initial sentences, or immediately after Background elements, clauses containing these verbs regularly express the goals of the research. Indeed, using a verb from this set appears to be a much more frequent signal of Purpose elements than either the use of nouns such as *purpose* or *aim*, or even the 'to + INFINITIVE' clause: verbs of this type occurred in Purpole elements in nearly three-quarters (59) of the 80 abstracts, but, as we have seen, appear in the more overt structures described above in less than half of these.

We prefer to use the term Purpose to describe the function of this rhetorical element, rather than 'principal activity', which we think blurs the distinction from Method unnecessarily.

The 'purpose' verbs discussed above refer to the aims of the research process, but in a small number of cases, intention is expressed in terms of the communicative purpose of the writers or their texts (cf. Salager's 'ontological imports'; 1990a: 113):

> The present study describes changes (Epi 4)
>
> this paper reports findings on (Epi 8)
>
> This report presents experiences (Clin 5)
>
> We describe the expression of (Bio 1)

The numbers are too small to allow us even a tentative impression of any field-specific preferences for particular 'purpose' lexis, but it is interesting that each of the 'purpose' verbs that recurs in the data is attested in more than one of the four medical fields we looked at. While these verbs may have a wide currency across fields, a collocation study on a more extensive corpus might well reveal some field-specific lexical patterns that could be presented to specialist learners (cf. Williams 1996).

In other words, it seems to be the case that, in our data, the most reliable signal of introductory elements functioning to explain the purpose of the study was in the lexical choice of a verb denoting the general character or aim of research activity, a small number of which seem to be used very frequently. In a handful of abstracts, a further set of subject NP / verb collocations (e.g. *this paper reports*) referring to the intentions of the reporting process marked essentially the same rhetorical element. Analysing the data in this way, we believe, allows us to be consistent in labelling Weissberg and Buker's 'P' - element 'Purpose', and removes the awkwardness of distinguishing 'principal activity' and 'scope' from 'Method'. We found Purpose elements, identified by these linguistic signals, in a total of 62 of the 80 abstracts examined.

'Fronted claims'

In two biochemical abstracts, generalised knowledge claims were announced early, before Method / Result elements, rather than in the more conventional Conclusion position at the end. This strategy might be seen as an alternative to a Purpose statement, which is thus rhetorically unnecessary. In one case, this option is a natural way of highlighting the continuity between the findings of a previous study by the same research team, presented as Background (We have previously shown...), and those of the present study (We now show...):

> [B] We have previously shown in intact human erythrocytes that both the plasma membrane Ca2+ pump activity and its phosphorylation can be increased by phorbol-12-myristate 13-acetate (PMA), a known stimulator of protein kinase C. These effects were inhibited by high doses of adriamycin (L. C. Wright et al., 1993, Arch. Biochem. Biophys. 306, 277-284). [Fronted claim = P?] We now show that low doses of adriamycin (ADR) (maximum effect at 10 microM for 1-6 min) decrease the amplitude of ... (Bio 12)

In the other case, the abstract begins with a claim that closely echoes the title. The rest of the abstract presents experimental results apparently as generalised knowledge claims, in the present tense throughout (see the Analysis of Results, below). The only hedging is effected through the phrase 'under our experimental conditions' - hardly specific enough to merit Method status:

> Lamb liver phosphogluconate dehydrogenase is inactivated and selectively cleaved during irradiation in the presence of vanadate. Under our experimental conditions, the correlation between the species of vanadate in solution and rates of enzyme inactivation and cleavage indicates tetravanadate as the most likely photosensitizing agent, in agreement with previous data on other proteins. The enzyme is inactivated more rapidly at acidic pH and is partially protected by the coenzyme NADP, but not by the substrate phosphogluconate. Complete inactivation is obtained when only half of the protein is cleaved into smaller peptides. Differences in the pattern of the peptides produced are observed when irradiation is carried out in phosphate rather than in Hepes buffer: in the former instance cleavage results into formation of a main peptide of 47 kDa, while in latter case two additional peptides of 31 and 25 kDa are produced. (Bio 17)

Similarly, one of the Surgical abstracts, dispensing entirely with Methods or (past tense) Results, sets about the business of making knowledge claims and proposing applications, after careful positioning by means of what we take to be a Background 'importance claim':

> Phenotypic manipulation of allograft endothelium to reduce immunogenicity would have a significant impact on transplantation. In this study we have demonstrated that random seeding of a heart allograft with endothelium, of host origin, not only promotes long-term survival, but

> reduces the requirement for pharmacologic immunosuppression. We propose that this simple technology could easily be extrapolated to the clinical arena where hypothermia and preservation solutions have allowed allografts to remain ex vivo for extended periods. (Surg 17)

In the absence of explicit signals it can be difficult for the lay reader, at least, to distinguish fronted claims from Background statements. This difficulty is not necessarily related to ignorance of technical language or processes. In the following case, for example, we are unsure whether the underlined sentence is Background, in that the writer is simply restating a known fact (in which case the precise aim of the study seems not to be made explicit), or whether it is a generalisation of the results listed below (fronted claim):

> The success of laparoscopic cholecystectomy has been tarnished by the increased risk of bile duct damage associated with the operation. Many of these injuries can be managed by endoscopic techniques. Experience of such injuries between 1991 and 1994 was reviewed. Twenty-four patients were referred: 11 with injuries to the cystic duct alone, five with complete hepatic duct obstruction and eight with high bile duct leaks. All patients with leaks from the cystic duct were managed successfully endoscopically [...] It is suggested that all suspected injuries after biliary surgery require management by a combination of interventional radiology and endoscopic interventional techniques. Surgery may be required only if there is complete obstruction of the biliary tree. (Surg 4)

Implied purpose

In a small number of the remaining abstracts which lacked either any explicit Purpose statement or fronted claim, the purpose seemed quite clearly inferrable from Background statements, which fell into two catgories, *hypotheses* and *gaps*.

Hypotheses

We were initially puzzled by sentences in the early parts of three Surgery abstracts. In each case, the sentence contained the modal *may* (often a Conclusion signal - see below), but occurred before the Method and Result elements. In one case the sentence was preceded by two Background sentences and followed by a Purpose statement signalled by *was evaluated*. The other two were initial sentences, followed by Method statements. On close reading of the rest of each text it was clear that, despite the modal *may*, these were not hedged fronted claims, but references to the hypotheses which the studies were designed to investigate. Note in the example below the lack of modality in the two concluding sentences, which apparently claim confirmation of the hypothesis.

> The complications of open antireflux operations may be reduced by laparoscopic techniques. Fifteen patients of median age 42 (range 16-79) years with gastro-oesophageal reflux underwent laparoscopic fundoplication. Preoperative and postoperative assessment was by clinical scoring, oesophageal pH measurement and manometry. Median (range) operating time was 115 (60-210) min and hospital stay 3 (1-6) days, with no conversions to open operation and only one minor wound infection. Four patients had occasional reflux symptoms on wound infection. Four patients had occasional reflux symptoms on postoperative assessment at a median of 7 weeks and nine had occasional dysphagia. Median DeMeester symptom scores improved from 4 to 1.5 ($P = 0.001$). There were significant increases in both lower oesophageal sphincter pressure and length. The nocturnal proportion of time at $pH < 4$ decreased from 9.6 to 0.05 per cent ($P = 0.02$), although the drop in total proportion of time at $pH < 4$ (10.4 to 2.2 per cent) was not statistically significant ($P = 0.08$). Early objective results of laparoscopic fundoplication show improved symptoms, decreased acid reflux and altered lower sphincter

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> function. The procedure combines the benefits of early mobilization and reduced morbidity with the efficacy of the traditional open operation. (Surg 7)

Though no 'purpose' verbs are used, it could be argued that the initial *may* sentences perform an equivalent function to Purpose elements in motivating the research processes described, and we are inclined to recognise them as representing an alternative means of signalling Purpose; there is, of course, an obvious relationship between *hypothesis* and (research) *question* - Zeiger's term corresponding to Purpose.

Gaps

In three cases, the aim of the research is implied in the Background element by pointing out a gap in existing knowledge (a frequent strategy for 'creating a research space' in introductions, of course; cf Swales, 1990: 154). In these cases the abstract proceeds from Background to Method / Results, leaving the reader to infer that the aim of the research process described in Method is to fill the gap (underlined in the following example):

> The consumption of n-3 fatty acids from seafood has been related to a lower incidence of coronary artery disease. Adipose tissue composition has served as a biological marker of chronic ingestion of many dietary polyunsaturated fatty acids. However, the incorporation of n-3 fatty acids into the fat depots has not been studied in humans. Daily dietary supplementation with > or = 10 g n-3 fatty acids from fish oil for > 12 mo resulted in significantly greater 20:5n-3, 22:5n-3, and 22:6n-3 concentrations in fatty acids of adipose tissue, and a greater 20: 5n-3 fatty acid content in plasma lipid classes (cholesterol esters, phospholipids, and free fatty acids) of supplemented subjects compared with nonsupplemented control subjects. (Clin 15)

This strategy was represented in one abstract from each of three medical fields: surgical, epidemiological and clinical. In three further cases (from biochemistry and epidemiology), gaps were identified in the Background, but explicitly signalled Purpose statements (underlined) were also included

> In recent years a number of research projects have reported on the level of alcohol use by young people. The research to date, however, has tended to overlook the ethnic origins of the young people as a factor associated with the level of alcohol use. Against this background, this paper reports findings on the use of alcohol by 15-16-year-olds in Leicestershire with specific reference to ethnic group. (Epi 8)

> Whilst there have been many reported assessments of selective medicals at 5+ school entry, there is a dearth of publications on the value of selected medical review at secondary transfer age. It was decided to evaluate this within the South Downs Health Trust. (Epi 9)

> ... However, the mechanism of trans-activation is unknown. The consequences of RAR/RXR binding to the PEPCK RARE were examined using a circular permutation analysis as a first step to explore the possible role of DNA conformational changes in the RA response. (Bio 2)

Note the care with which the preliminary and tentative nature of the biochemical study is stressed in respect of the much wider problem of filling the 'gap'.

The following clinical abstract Background element decribes a gap of a different type - in practice rather than in knowledge (though the implication must be that what is really missing is a specific empirical basis for a change in practice):

> As a result of the Seven Countries Study, the Mediterranean diet has been popularized as a healthy diet. Nevertheless, it has not replaced the prudent diet commonly prescribed to

> coronary patients. Recently, we completed a secondary, randomized, prospective prevention trial in 605 patients recovering from myocardial infarction in which we compared an adaptation of the Cretan Mediterranean diet with the usual prescribed diet. (Clin 17)

We have analysed the relative clause in the third sentence as Purpose, rather than Method, as, despite following a Method element, it contains one of the verbs (*compare*) which we have argued function in such a context as explicit Purpose signals. This is a borderline case, however.

In claiming to identify implications of purpose, we acknowledge the likelihood that our ignorance of the discipline's goals, values and knowledge base may prevent us making inferential leaps of a magnitude that may seem perfectly feasible from within the discourse community in question. A specialist informant would be needed, for example, to disconfirm our assumption that the purpose of the following study is not made clear to the reader, explicitly or implicitly, at the beginning of the abstract (though we would accept that the Method - retrospective review of medical records - can be inferred by anyone with even a superficial awareness of medical research processes) :

> [B] Primary small-cell cancer of the esophagus is a rare tumor that disseminates early with a uniformly poor prognosis if untreated. [R] Sixteen patients with malignant dysphagia referred to the Thoracic Surgical Unit, City Hospital, Edinburgh, within a 10-year period had a diagnosis of primary small-cell cancer of the esophagus. (Surg 20)

Finally, we should comment on what we mean by *purpose*. We recognise that within the general area of *motivation* one could distinguish *prompts* from *goals*. In this analysis we have assumed that Purpose refers to *goal*, in the sense of the intended outcome of the research process (in Zeiger's terms, the answering of a research 'question'), rather than some pre-existing situation out of which the research has arisen (which we count as Background). Hence we have not considered the underlined phrases in the following examples to be Purpose elements, even though, in the first case, the connection explicitly highlighted between Background and Method is the only motivation provided:

> [B] Wilms' tumor is one of the most common abdominal childhood malignancies. Wilms' tumor rates in Brazil are among the highest in the world. This prompted the Brazilian Wilms' Tumor Study Group [M] to conduct a hospital-based, multicenter, case-control investigation of environmental risk factors for the disease. (Epi 19)

> [B] Because of the potentially serious consequences of myocardial depression in patients undergoing cardiac operation, [P] we examined the effect of vancomycin infusion on cardiac hemodynamics [M] in patients scheduled for cardiac operation. (Surg 17)

> [B] A recent large increase in Caesarean section (CS) in Italy was the initial stimulus for a study [P] to identify risk factors for CS and, if possible, to suggest strategies to counteract the rise. (Epi 6)

The distinction is clearly observed in the latter two examples, where the more specific goals of the studies are also identified as quite separate notions, signalled in ways already discussed ('purpose' verbs *examine* and *identify*, and a 'to' clause, in this case as complement in a noun-phrase). Perhaps a term such as *goal or aim* might be a more satisfactory tag.

There remain around 17 abstracts in which the purpose is neither explicitly stated nor retrievable by implication from background information. A co-operative reader familiar enough with disciplinary goals and processes to infer the purpose from the methods or results is apparently assumed. Here, for example, are the beginnings of two of these 'purposeless' abstracts:

> Preoperative laboratory tests were performed on elective ambulant orthopaedic patients (n = 26) on the afternoon after their arrival in hospital and on the next morning before the operation. Significantly lower concentrations of leukocytes, albumin, total protein, platelets, and total calcium were observed ... (Clin 4)
>
> In the presence of a 100 mM Na+ gradient, transport of L-carnitine into rat renal brush-border-membrane vesicles was linear over 30 s and showed an overshoot at 5 min. The uptake of L-carnitine was clearly less active in the presence of other cations such as Li+, K+, Cs+ or choline... (Bio 7)

Summary of findings re Purpose

Purpose is indicated in an introductory stage in the majority of abstracts, following any Background element. Purpose is indicated in a variety of ways, both explicitly and implicitly.

Explicit purpose elements are normally signalled linguistically, in syntax or lexis, or both.

Lexical signals:

- the use, in appropriate contexts, of one of set of verbs, a few of which form a high-frequency core *(examine, assess, study, evaluate, determine, test)*
- subject noun-phrases such as the aim / purpose of this study
- metatextual subject-verb collocations such as this paper reports.

Syntactic signals:

'to + INFINITIVE' clauses (*to determine*), most commonly as adjuncts in clauses representing Methods elements, (*To determine ... we ...*), or as complements in copulative clauses with Purpose noun-phrases as subject (*The aim of this study was to determine ...*), but sometimes in other constructions.

Fronting generalised knowledge claims is another explicit strategy; present tense verbs are used, but the absence of other signals can make such statements difficult to distinguish from Background for the non-specialist reader.

Implicit indications of Purpose can involve either referring to the research hypothesis (attested only in Surgery abstracts, and signalled by *may*), or identifying a gap in the disciplinary knowledge base; adversative markers (*however*) and negative verbs / lexical items (*not, overlook, unknown*) are typical signals.

3.2 Analysis of the Methods and Results elements

First we give a brief summary of recommendations for the content of the Methods and Results elements of abstracts. Then follows an account of what we found in our sample.

The Council of Biomedical Editors give detailed requirements for the contents of the Methods section of research reports, but for abstracts state simply that, in addition to purpose, main findings and conclusions, information should be given about "basic procedures (selection of study subjects or laboratory animals; observational and analytical methods)" (p 8).

Weissberg & Buker state that the abstract should contain "some information about the methodology used in the study" (p 187), and also point out that, for the sake of brevity and emphasis on results, abstracts can be reduced to three elements: P&M (Purpose and Method), R (Results) and C (Conclusions) (p. 188).

Zeiger (p 258) advises that the abstract should contain only important details of materials and methods: i.e. the species, population or material, and the experimental approach or protocol (including the independent and dependent variables). But she adds: "However, the abstract is often streamlined in one way: often only the species or the population, their condition, the material and maybe a brief overview of the experimental approach are given in the statement of what was done. The details of what was done - specific independent and dependent variables, doses, methods - are given in the sentences that tell what was found. This organizational strategy avoids repetition." (p.259)

In our sample of 80 abstracts we found examples of:

(i) substantial and separate Methods elements, as might be expected from the recommendations of the Council of Biomedical Editors

We found very few completely distinct Methods elements. Those we did find were usually substantial, summarising the subsections of the Methods sections of the articles abstracted, as in this example:

> [P] So that changes in production and binding of tumor necrosis factor-alpha during postpneumonectomy lung growth could be determined, [M] rats underwent left lung resection and were killed 3, 7, or 14 days later, 1 hour after the injection of 3H-thymidine. Serum was collected, and the lungs were lavaged and perfused in vitro. Lung volumes were measured. Lungs were homogenized, and changes in lung weight, protein content, deoxyribonucleic acid content, deoxyribonucleic acid synthesis, and tyrosine kinase activity of different lobes were recorded. Tumor necrosis factor-alpha content of serum, lavage fluid, and perfusate was measured by an enzyme-linked immunoassay. The binding of tumor necrosis factor-alpha to membrane extracts of lung homogenates was measured by immunoblots. [R] Whereas the cardiac lobe of the remaining right lung demonstrated larger increases in size. (Surg 11)

The language features prescribed by Weissberg & Buker for the Methods section are exemplified here: i.e. chronological ordering, past tense, passive voice.

(ii) minimal Methods elements, often incorporated into Purpose, as described by Weissberg & Buker

Only 4 abstracts had no Methods element; but the great majority of Methods elements were very short, sometimes only one or two words. Each of the examples below, though short, constitutes a complete Methods element. The very short elements probably represent what Weissberg and Buker term 'scope'.

> A prospective audit was performed. (Surg 1)
>
> Daily dietary supplementation with > or = 10 gm-3 fatty acids from fish oil for > 12 months [R] resulted in .. (Clin 15)
>
> [P] To establish current practice [M] we circulated a questionnaire to 300 geriatricians ... (Clin 3)
>
> The clinical findings of 39 cases diagnosed between 1972 and 1991 were reviewed retrospectively.. (Surg 10)

> A possible association between body iron stores, measured as serum ferritin, and carotid arterial intima-media thickening was investigated in the Atherosclerosis Risk in Communities Study during 1990-1992 using a matched case-control design. (Epi 15)

This selection of examples presents the language features typical of this category of Methods element, namely:

- past passive verbs
- inanimate noun (e.g. *study, report, audit*) with active present verb
- *we* with past verb (denoting research activity)

It is worth noting that in research reports the number of subjects studied may or may not appear in the Methods section but almost always appears at the start of the Results section; regardless of whether it was given beforehand. In all of our sample of abstracts the number of subjects studied appeared only once, and always in the Methods element.

(iii) one or two statements of Methods embedded, usually subsententially, at relevant points in the Results element, as described by Zeiger

In research reports, the procedures used are identified and described if necessary in the Methods section. Reference is then made to them again at the relevant points in the Results section. We found a few instances of this in the abstracts: e.g.:

> [M] Mean differences between self-reported and measured weight and height were used as indicators of bias, and the accuracy of BMI and the prevalence of overweight based on this data were analysed......[R]....The calculation of body mass index resulted in .. (Epi 2)

but double reference to a procedure was not common, presumably because of constraints of brevity. However, the single reference often occurred in Results rather than in Methods. This was particularly true of reference to statistical procedures.

The statistical procedure can be implied:

> The relative risk (RR) for those drinking one glass of milk per day was similarly low (RR = 1.2; 95 percent confidence interval (CI) 0.7-2.0) ....(Epi 16)

or described in a complete sentence

> Stepwise logistic regression analysis was used to find independent determinants for this clustering from a set of socioeconomic, demographic, and behavioral (type A components) determinants. (Epi 13)

or (most commonly) it was in subject position:

> Logistic regression analysis showed that women who drank two glasses of milk per day had the lowest risk .. (Epi 16)

> Multivariate analysis showed no correlation between the factor of incomplete resection and survival. (Surg 15)

We also found 2 abstracts where the results were in two subsections, with a short reference to method (underlined in the example below) before the second section: e.g.:

> [R1]...The age-adjusted mortality rates (per 100,000 person-years) for the four cohorts were 760 (Japan), 158 (Israel), 408 (Allegheny County), and 250 (Finland). By using the mortality data from Allegheny County, Pennsylvania, to extrapolate to the US IDDM mortality experience, the authors estimated [R2] 2,396 deaths .. (Epi 12)

It could be argued that this is a short sequence of elements MRMR, rather than embedding (see below).

(iv) statements of Methods embedded throughout the Results element, in keeping with Zeiger's recommendation

One of our more unexpected findings was that many of the biochemistry abstracts did not follow the textbook pattern of Method element followed by Result element, as described by Swales (1990) and as recommended by Weissberg & Buker and the International Committee of Medical Journal Editors. Instead the abstracts report a series of findings elicited by different procedures. This type of information structure is in fact reported by Zeiger:

> "However, the abstract is often streamlined in one way: [...] The details of what was done - specific independent and dependent variables, doses, methods - are given in the sentences that tell what was found. This organizational strategy avoids repetition ... (Zeiger: 1991, p 259)

The following example (with Method elements underlined) shows how interlaced the Method and Result elements are:

> The presence of cytochrome P450 (P450) and associated monooxygenase activities were estimated in isolated rat brain mitochondria and compared with the corresponding activities in microsomes. Total P450 content in brain mitochondria from naive rats was twice that of the corresponding microsomal level. The ability of brain mitochondria to metabolize the potent carcinogen N-nitrosodimethylamine was more than twofold that of the corresponding microsomal activity, while the 7-ethoxycoumarin-O-deethylase activity was significantly lower in mitochondria. Immunoblot experiments using antisera to purified rat liver microsomal P450s, namely P450 (2B1/2B2), P4501A1, and P4502E1, and purified phenobarbital-inducible rat brain P450, revealed the presence of immunoreactive bands in isolated brain mitochondria. These various antibodies to P450 inhibited the brain mitochondrial monooxygenase activities to significant, though varying extent. The addition of antiserum to microsomal NADPH cytochrome P450 reductase did not affect the mitochondrial P450 associated monooxygenase activities, although it completely inhibited the corresponding microsomal activities. Chronic ethanol administration resulted in twofold induction of total P450 content and the monooxygenase activities known to be mediated by P4502E1, such as N-nitrosodimethylamine-N-demethylase and p-nitrophenol hydroxylase in brain mitochondria. Pretreatment of animals with phenobarbital resulted in the induction of aminopyrine N-demethylase activity in brain mitochondria. (Bio 19)

This pattern occurred in as many as 14 of the 20 biochemistry abstracts, but not at all in the abstracts from clinical medicine, surgery and epidemiology (apart from the 2 instances of MRMR patterns in epidemiology: see above). We speculate that this difference reflects a difference between the research process in biochemistry and the other three fields. Consultation with a specialist informant will be needed to confirm or disconfirm this.

It is worth noting here that the biochemistry abstracts differed from others also in that 3 of the 20 were in present tense throughout. None of the rest of the sample used present tense throughout. The advice in Weissberg and Buker is to use past tense for Methods and Results. Swales and Feak, however, point out the present tense phenomenon, commenting that it is "more likely to occur in physical sciences such as physics, chemistry and astrophysics and less likely to occur in the social sciences" (p 213).

Summary of findings re Methods and Results in abstracts

1 Extended (i.e. more than a sentence) and discrete sections on Methods occurred but were rare.

2 Statistical procedures were not given in Methods, but named or implied at relevant points in the Results.

3 Biochemistry abstracts tended not to have classic Methods and Results elements, but to present sequences of experimental procedures and findings.

4 Verbs in Methods and Results were all past tense except in 3 abstracts (biochemistry) where present tense was used throughout.

3.3 Analysis of the Conclusion element

Instructions in the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* (International Committee of Medical Journal Editors, 1993) are specific about the contents of Methods and Results elements in abstracts, but about the Conclusion the advice is simply to state "the principal conclusions" (p 8). Weissberg and Buker's model similarly specifies "a statement of conclusion or recommendation" (p 186), though more can be inferred from their instruction to use the "present tense/tentative verbs/modal auxiliaries" (p192).

In Zeiger's slightly different model of the abstract, ***Question***, ***What was done*** and ***What was found*** are followed by ***Answer***. She emphasises the importance of making sure that the answer answers the question asked, and adds: "If part or all of the importance of your paper is the implication of the answer or a speculation based on the answer, include a sentence stating the implication or speculation at the end of the abstract" (p 258).

We did not ask "What are Results?" but we did find ourselves asking "What is a Conclusion?" It clearly means more than the sentence which is last. We used a crude working definition: a generalisation after a list of findings, which may involve a summary of findings and/or implications, in terms of support for a hypothesis and/or indications for future research or clinical practice. We also kept in mind Zeiger's view that the conclusion should provide an answer to the research question.

We then scanned through our sample looking for conclusions. While analysing we noticed we were responding to the following language signals:

- explicit announcements of conclusion *it is concluded that*
- signals of summary like *these data show*
- signals of implication and recommendation - *implications, should*
- logical connectors like *thus, therefore, hence*
- change from past tense (reporting results) to present tense (knowledge claims)
- modification of the generality of the knowledge claim, through modals like *may*; adjectives and adverbs like *mainly, probable*, and verbs like *suggest, appear*
- value nouns, adjectives and adverbs, like *benefit, important, efficiently, useful*

Conclusions were typically signalled by more than one of these. For example the following conclusion contains an explicit announcement of conclusion, change from past tense in Results to present, a logical connector (*thus*), a modified knowledge claim (*it appears*), and a value adverb (*efficiently*):

> [R]..higher plasma concentrations of antioxidant vitamins C and E were observed. [C] We conclude that a Cretan Mediterranean diet adapted to a Western population protected against coronary heart disease much more efficiently than did the prudent diet. Thus, it appears that the favorable life expectancy of the Cretans could be largely due to their diet. (Clin 17)

and a similar array of language features can be seen in these two examples:

> [R] ... and none of the patients with incomplete resection (12 cases) had relapse within the thorax. [C] The present experience demonstrates that adoptive immunotherapy may be applied with safety in patients operated on for stage III non-small-cell lung cancer and suggests that it can be useful, notably in patients with locally advanced disease. (Surg 15)

> [R] ... affected DNA ring closure in a phase-sensitive, RA-insensitive, manner. [C] Taken together, these observations support the idea that RAR/RXR heterodimers distort the structure of the PEPCK RARE, at least in part, by altering DNA flexibility. The conformational change in the PEPCK RARE upon RAR/RXR binding has implications for how RAR/RXR heterodimers recognize various RARE structures. (Bio 2)

On first inspection we confidently identified conclusions in 55 of the 80 abstracts.

We also identified 2 abstracts as having no conclusion. Both ended with results, not summarised and with no general knowledge claim. It is worth noting that neither of these abstracts started with a statement of purpose, and so there was no clear answer to a research question. One of these abstracts is given below in full:

> Brain tissue blood flow was measured precisely by the colored microsphere method during retrograde cerebral perfusion in 10 normothermic mongrel dogs. The average tissue blood flow rates to the cerebral cortex, cerebral medulla, brain stem, cerebellum, and spinal cord during retrograde cerebral perfusion at 25 mm Hg of external jugular venous pressure were 10.5 +/- 10.3, 4.2 +/- 4.6, 11.1 +/- 9.8, 12.3 +/- 8.6, and 9.1 +/- 5.8 ml/min per 100 gm, respectively. The brain was perfused wholly by retrograde cerebral perfusion without lateralization. Total cerebral blood flow was calculated as the sum total rates of blood flow to each area. Total cerebral blood flow during retrograde cerebral perfusion at 25 mm Hg was 7.8 +/- 4.4 ml/min, which represented 3.5% +/- 1.9% of whole body blood flow and one third of the total cerebral blood flow (28.0 +/- 4.2 ml/min) during cardiopulmonary bypass at a flow rate of 1000 ml/min. Oxygen consumption and carbon dioxide elimination by the total cerebrum during retrograde cerebral perfusion at 25 mm Hg were 0.54 +/- 0.23 ml/min and 34 +/- 15 mumol/min, respectively, or 8.6% +/- 3.6% and 7.0% +/- 3.1% of the corresponding whole body value and represented about one third of that measured during cardiopulmonary bypass (1.21 +/- 0.39 ml/min and 96 +/- 15 mumol/min). Total cerebral blood flow, total cerebral oxygen consumption, and carbon dioxide elimination increased as the external jugular venous pressure increased from 15 to 25 mm Hg; however, no further increase occurred once the external jugular venous pressure exceeded 25 mm Hg. (Surg 18)

We think that these 2 abstracts are defective, in spite of having passed through editorial screening to publication. (See Salager-Meyer (1990b) and Taddio et al. (1994) for studies of abstracts published with missing elements.)

During this stage of the analysis we also remarked that 10 further abstracts, although lacking final generalisations, appeared to be informationally complete. They stated a research question (or purpose) and then answered it by stating the results, thus fulfilling the requirements proposed by Zeiger. That is, a summary of results can be understood as a conclusion, providing that the results do not need interpreting for the question to be answered. We were therefore reluctant to classify these with the 2 abstracts without conclusions. An example follows:

> The use of warfarin and aspirin for the primary prevention of stroke in elderly patients with atrial fibrillation (AF) is controversial. To establish current practice we circulated a questionnaire to 300 geriatricians (G) and 300 cardiologists (C). The response rates were 47% G and 51% C. Most physicians prescribed warfarin in AF associated with mitral stenosis (G vs C, 86% vs 89%, NS). Cardiologists were more likely to prescribe warfarin in AF associated with dilated cardiomyopathy (G vs C, 52% vs 86%, $P < 0.01$). A minority would prescribe warfarin in aortic valve disease and AF (G vs C, 37% vs 24%, $P < 0.05$) and lone AF (G vs C, 10% vs 26%, $P < 0.01$). Aspirin was favoured in aortic valve disease and lone AF. The cardiologists were less reluctant to use warfarin in the young and more likely to electrically cardiovert the young with chronic AF. (Clin 3)

Admittedly this abstract lacks any statement of implication or recommendation. But we had already accepted abstracts as having conclusions when the conclusion was no more than a generalising summary of results. Is a summary necessary, we asked, when the statements of results provide as clear an answer to the research question as they do in this example? For us, only one of these 10 abstracts would have been clearer with a summary - and that may be because of our lack of subject knowledge. That one abstract was added hesitantly to the "no-conclusion" category. The remaining 9 were categorised as being informationally complete but lacking a rhetorical conclusion. We recognise, though, that there are two strong arguments against our claim that abstracts can be informationally complete without a rhetorical conclusion. The first is that, quite apart from textbook recommendations, the professional literature (e.g. International Committee of Medical Journal Editors (1993); Taddio (1994)) consistently requires a conclusion. The second is that there appears to be a discourse community convention that abstracts need a conclusion to achieve rhetorical completeness. Interestingly, we noted that out of the 9 abstracts presently categorised as informationally complete but without conclusions 4 ended with a non-numerical result, as if echoing the rhetoric of conclusion without fulfilling a real generalising or summarising function. For example:

> A 4-week study involving 354 patients with the symptoms of gastro-oesophageal reflux disease was conducted to assess the effect of ranitidine (as effervescent tablets) on their relief and quality of life. All patients received 150 mg bd for 2 weeks, with those responding to treatment continuing on the same dosage for a further 2-week period and 'non-responders' having the dosage increased to 150 mg qds for a further 2 weeks. Quality of life and symptom assessments were carried out at 0, 2 and 4 weeks. Two weeks' treatment with ranitidine 150 mg bd was effective at controlling the GORD symptoms in 78% of patients. A 4-week treatment with either 150 mg bd or qds controlled the symptoms in 85% of patients. All patients had significant improvements in all dimensions of their quality of life over the study period. (Clin 6)

Turning next to the "difficult cases" still unclassified, we looked more carefully at our checklist of language signals, and carried out a frequency count across the whole sample of 80. The results are given below.

Category of language signal	Frequency of occurrence
change from past tense to present tense/modal	58

anaphoric noun phrases (*these data*)	43
lexical verbs making modified claims (e.g. *suggest, appear*)	*31/41
lexical verbs making unmodified claims (e.g. *show, demonstrate*)	*25/37
modal auxiliary verbs making modified claims (e.g. *may, can*)	*19/24
value nouns, adjectives and adverbs (e.g. *important, useful*)	16
recommendations (only *should, need*)	12
explicit announcement of conclusion (e.g. *we conclude*)	7
logical connectors (only *thus, therefore, hence*)	*4/5

* the first figure denotes the number of occurrences in the final sentences; the second figure includes occurrences throughout an MRMR or sequenced MR abstract, where results may be commented on separately as they are listed.

We were surprised to note the low number of logical connectors, and also the preference for modification by lexical verb over modal auxiliary. But for us the most striking finding was the 58 occurrences of change from past to present tense/modality. All 55 abstracts that we had identified as definitely having conclusions evidenced this tense change. We had thought we were responding to a complexity of factors - and perhaps indeed we were - but the tense change signal appears to be what most influenced our perceptions.

With this insight we looked again at the remaining unclassified 13 "difficult cases". Four of these were judged now to have conclusions:

The first was missed because of the unorthodox use of present perfect tense:

> [R] the declining prevalence was found in those with a vocational education only and an existing educational difference in smoking behaviours was enhanced. [C] The decline in smoking in Denmark in the last decade has been associated with a narrowed gender difference and widened social difference. Knowledge of the health consequences of smoking has increased independently of these changes in smoking behaviour. (Epi 4)

The second, we argue, contains a conclusion on the strength of the phrase *remaining to be addressed*:

> [R]..showed no evident change with 9.5% of children selected from 2729 in 1992 and 9.6% selected from 2473 in 1993. However, analysis of individual schools showed significant changes [C] which illustrated the improvements achieved and the areas of weakness remaining to be addressed. (Epi 9)

The third and fourth were held to be borderline on first inspection because of the limiting effect of the past tense. Now we argue that this is outweighed by the other signals of generalisation:

> [R] significantly correlated with corresponding concentrations of fatty acids in adipose tissue. [C] These findings indicate that the long-term ingestion of large amounts of n-3 fatty acids in humans resulted in their incorporation into the adipose tissue fatty acids. Incorporation of the fatty acids into adipose tissue warrants consideration for use in clinical studies requiring precise documentation of long-term n-3 fatty acid consumption. (Clin 15)

> [R] whereas no group difference in the serum concentrations of thiobarbituric acid-reactive substances was observed. [C] Thus, no adverse metabolic effects of long-term fish-oil supplementation assumed to be of clinical importance were seen. (Clin 19)

Of the remaining 9 "difficult cases" one had an MRMR structure, with each subsection of R starting with a claim in past tense, followed by evidence, e.g.:

> For trisomic loss, later data did not support prior observations. Associations between trisomy and past or current smoking did not vary significantly with age.. (Epi 18)

Another presented a list of results, with the last as a present tense claim:

> The natural variation among inbred strains of mice was used to elucidate the genetic factors underlying the responsiveness to high-fat and high-cholesterol diets. The nine strains examined are the progenitors of recombinant inbred strain sets: C57BL/6J, C57L/J, SWR/J, SJL/J, SM/J, A/J, AKR/J, C3H/HeJ, and DBA/2J. Plasma lipids, liver lipids, the prevalence of cholesterol gallstones, and the size of aortic fatty streak lesions were examined after 18 wk of consumption of the diet containing 15% fat and 1% cholesterol. The variation in aortic lesions found among inbred strains provided the basis for several additional studies that demonstrated the existence of eight genes affecting atherosclerosis. These genes, named Ath1 to Ath8, are briefly described. The genetic analysis of variation in gallstone formation demonstrated that more than one gene affects this phenotype. (Clin 13)

Similarly, another had signals of conclusion in the final sentence but the sentence summarised only the last of a list of results:

> [R]. Red blood cell ($r = -0.49, P < 0.05$) and plasma ($r = -0.42, P = 0.08$) folate concentrations were negatively correlated with milk zinc concentrations. Mean red blood cell folate content declined between 4 and 12 wk PP among PL (31%) and FF (34%) subjects ($P < 0.05$) but not among SL subjects. Hence, 300 micrograms folic acid/d was sufficient to prevent a decline in blood folate values of these adolescents PP. (Clin 14)

It is possible that the last two examples are further illustrations of the influence of rhetorical conventions.

The remaining 6 "difficult cases" were all from the field of biochemistry. Three of these used present tense throughout (Bio 14, 17, 18). For example, the abstract (Bio 17) quoted on page [10] was all knowledge claims. A fourth abstract (Bio 10) similarly consisted of a sequence of claims, but with mixed tenses and comment. Swales & Feak (1994) point out that although past tense is most commonly used for the presentation of results in abstracts, present tense abstracts do occur, and suggest that present tenses are most likely to be found in physics and chemistry. Our findings support their suggestion.

The remaining two biochemistry abstracts were too technical for us to be sure of the functions of sentences, in spite of signals. Consultation with a subject specialist would clarify the functions of present tense sentences in these abstracts. It would also be interesting to ask for the judgement of subject specialists as to the adequacy of the abstracts with no conclusion (categories B and C below).

Summary of findings re Conclusions in abstracts

Our analysis so far points to the following categories:

A	Clearly marked conclusion, offering a generalisation of some sort and an answer to the research question; and/or implications	59 abstracts
B	No conclusion in terms of generalisation and/or implications, but the listed results answer the stated research question	10 or 9 abstracts
C	No conclusion i.e. no generalisation and no answer to a research question probably unsatisfactory abstracts	2 or 3 abstracts
D	"difficult cases"	9 abstracts
	(present tense claims throughout)	(3)
	(method, results, claims and implications interwoven)	(2)
	(generalisation of final result only)	(2)
	(incomprehensible to us)	(2)

4. **Comment**

The majority of the abstracts in our sample were found to be in accordance with the Weissberg and Buker model (B) P M C, but a considerable number differed. The most frequent difference was that one or more elements were missing. This raises the question, which we could not confidently answer, of whether the model should be adapted or whether the abstracts are defective; some alternative rhetorical strategies seem effective. Subject specialist judgements would be interesting on the well-formedness of these abstracts, particularly with regard to the adequacy of statements of purpose and meaning of findings.

A second difference was the tendency of biochemistry abstracts (14/20) to have a different MR structure from the model and the rest of the sample. This difference has important implications for ESP materials, suggesting that it cannot be assumed that the Weissberg and Buker model will be appropriate for all fields.

Weissberg and Buker's materials are less satisfactory with regard to the language specifications, as opposed to structure and function. In general their prescriptions about verb tenses hold true, but the range of linguistic options is very limited, and therefore limiting, particularly with regard to lexical signals. The book could be supplemented with further abstracts for students to study and evaluate. If the supplementary abstracts are drawn from the students' own fields then the problem of possible differences across fields would also be dealt with.

Swales (1981) introduced the concept of the rhetorical *move* as a broad analytical unit for the study of genres. The *move* works well in text genres which one can relatively easily segment into sequential chunks of discourse, but we found that the brevity imperative results in a tightness of linguistic packaging in which chunks are embedded in others. A broad-brush approach to segmentation is too crude.

At an early stage we abandoned an attempt to establish a minimal syntactic unit of analysis on which we might confer *move* status. Crookes (1996) acknowledges that the sentence, his chosen unit, conceals important shifts in rhetorical focus, and it was quickly clear to us that we needed to operate with smaller segments. We tried the clause (finite or non-finite), but found this, too, to be unsuitable. Method, for example, seems to be perceived as a discrete informational constituent, but is regularly expressed subclausally, in prepositional phrases or noun phrases combining in clausal structures with Purpose or Method expressions. Chafe's discoursal category of *idea units* seemed attractive (Chafe 1980), but we found these difficult to identify reliably. This may be because Chafe's primary criteria are prosodic, and we were working in a written medium. In the end, we decided to abandon the search for a precisely defined principle of segmentation which was appropriate for our purpose, and opted for the deliberate vagueness of Weissberg and Buker's preferred term, *element*.

The process of analysis was very subjective. We were in good agreement with each other in interpretation but felt insecure about the basis of our judgements. Readers who have had the patience to study our example texts will realise that for applied linguists these are grindingly difficult texts to understand. We also chose not to work with fixed categories but instead to go through a cyclic process of defining, identifying and redefining in order to establish categories that were useful for the description of our data. During this process we found ourselves swinging between the criteria of information structure and language signals. The complex interaction between information structure and language signals is properly central to genre studies, but we were not able to clarify the relation between the two in the process of analysis. Because we are not members of the discourse community and do not share its knowledge, it is possible that we have been over-reliant on language signals.

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ORAL CLASSROOM TESTING IN AN ADULT FRENCH COMMUNITY CLASS

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Abstract

A research project was carried out amongst 18 adult learners of French within a Community Education course to investigate the desirability and feasibility of administering achievement tests. The learners in these courses receive attendance certificates but are not normally formally assessed. This paper describes the project, including the assessment procedures and instruments, and discusses effects on learners and teachers. The results show that, although the assessment procedures did not appear to disrupt the normal class ambience, and there was some slight shift in the course of the term towards a more favourable attitude regarding assessment on the part of the learners, teachers reported some practical difficulties in conducting the assessments during normal class time and questioned the value of formal assessment in such a course.

1. Introduction

There is considerable interest in the development of testing in foreign language adult education and there are many large-scale tests and public examinations available, externally designed and validated and externally administered, such as the Institute of Linguists examinations, and the International Certificate Conference examinations. To our knowledge, however, there has been little published research in the area of classroom testing in non-certificated adult community classes where the tests take place during class time, and where the class teacher is the assessor. Of some relevance to our study, however, are the many assessment schemes developed for the secondary school sector, such as the Graded Levels of Achievement in Foreign Language Learning (GLAFLL) for the Lothian Region in Scotland (Clark 1987b) and the Modern Languages in Schools Project (MODLS) (Lee 1989). Under these schemes, the foreign language syllabus is organised into stages or graded objectives, each reflecting the development of communicative competence. One level of assessment is the stage test, taken by the pupils when they feel they are ready, and assessed by the class teacher. With the advent of the National Curriculum in England and Wales and of the Scottish equivalent, the Curriculum and Assessment in Scotland National Guidelines 5 - 14, these assessment schemes have largely been replaced, but the principles and methods of the school graded level schemes may be adapted for adult second language learners. Brindley (1989), for example, has argued quite strongly for the adoption and adaptation of such schemes for the Adult Migrant Education Program (AMEP) in Australia.

2. Context of our research

In the Institute for Applied Language Studies, classes in modern languages are offered to the local community during the day and in the evenings. The classes meet once a week over a twelve-week term. Learners may attend for one or more terms, and individual attendance even within one term can be irregular. The learners in these community classes come from a range of professional and social backgrounds and enrol for a variety of motives (professional, social, personal). Age may range from 18 to 75 years.

The stated aim of these courses is to teach communication skills in the foreign language in a relaxed and convivial learning atmosphere. Entry to the different levels of classes is decided on the basis of an informal interview but, at the time of this study, there were no other forms of assessment during the course. The learners receive an attendance certificate at the end of the course.

3. Scope and aims of our research

Many of our modern language (ML) learners have informally reported negative experiences of tests and examinations taken during their school years. As language teachers, however, we felt that some measurement of progress over a 12-week term might be desirable and might be useful to some learners personally or professionally. Our aim, therefore, was to investigate whether it is possible and of value to assess adult learners in French community classes in a principled way during class time, without removing testees from the classroom, and without disturbing or destroying the prevalent relaxed atmosphere of the classes.

Specifically our research questions were:

- Is it possible to test these ML learners formally without it being perceived by them as a negative experience and/or at variance with their reasons for attending a community course?
- Is it possible to test these ML learners without disrupting the relaxed classroom atmosphere?
- Do the learners perceive the tests to be of value to them (i.e. useful or worthwhile to them personally)?
- Is it practical for the class teacher to administer these tests during class time?

Three classes at "Lower Elementary" level were chosen for the investigation - one day class and two evening classes - 24 learners in total. Due to class changes in the first two weeks, however, the sample population was reduced to 18. Although there is no formal description of language competence required for entry to this level - learner placement for all levels being based on an interview with an experienced teacher - there is a well-defined syllabus. The learners in these classes were typical of the types of learners who attend community classes in terms of age, professional and social backgrounds, and reasons for attending community courses. The age range of our sample was 18-60+, and their occupations represented a wide variety of professions and also included housewives and retired people.

4. Procedure

This section describes the design procedure of the test and the underlying rationale.

4.1 Test design

Since the main aim of the syllabus at Lower Elementary level is the development of oral fluency, we decided that the tests should focus on the skill of speaking. We also felt that direct achievement tests, based on the course content, would be the most appropriate type of tests for this kind of teaching situation where there is only one class a week.

The test design was guided by Brindley's (1989) list of key characteristics of achievement tests as shown in Figure 1.

Figure 1: Key characteristics

explicit	Assessment criteria are made explicit and are stated in terms comprehensible to the learner and to any other parties involved in the assessment.
criterion-referenced	The assessment criteria are derived from a well-defined domain of ability.
standardised	Standards of performance are defined and agreed upon with the learners and others as necessary. These may be quantified if necessary.
relevant	The performance that is assessed is seen by the learners and/or others relevant to the learners' language-learning goals.
task-related	The learner's ability to carry out a communication task for a particular purpose is assessed.

Brindley (1989:44)

The test comprised three global tasks. As Clark (1987a:11) put it:

> ... *there is some sort of limit to the usefulness of analysing tasks into constituent skills, meanings and forms, and of focusing on them separately, one after another. We must frequently, it would seem, engage in global tasks in which the co-ordination of various levels of plans and operations is involved.*

Within the constraints of a test situation, the test tasks attempted to be authentic by reflecting the interactive nature of normal spoken discourse and realistic situations.

One full test item is reproduced in Appendix A for illustration. A brief description of the three test activities is given below:

i) an information-giving task: 2 learners talking about their family and friends using a photograph

ii) a discussion/decision-making task: 2 learners discussing a possible visit/short holiday using given stimuli of holiday publicity material

iii) a role play: one learner and the teacher performing a role play on typical situations, such as, at the hotel, at the police station, at the 'gite', with the learner playing themselves and the teacher taking on the role of the 'official' in the situation.

Each test activity was allotted 3-4 minutes.

The test material was pre-tested with volunteer learners and minor modifications were made regarding the instructions and material.

4.2 Classroom procedure

'Rehearsal' time was built into the test situation. Although the concept of rehearsal may seem to conflict with the requirement for unpredictability in authentic spoken discourse, the experience of the school graded level schemes mentioned earlier, GLAFLL (Clark 1987b) and MODLS (Lee 1989) led us to believe this was a desirable element to include. Pupils in the GLAFLL scheme "only take the Stage test when it is certain they can pass it. They take it, therefore, when they are ready for it" (Clark 1987a:14). This meant that the pupils practised the test item before opting to be assessed on their performance. Reporting on the MODLS project, Lee (1989:74) stated that the "distinction between practice and performance may be an unnecessary one in the context of classroom assessment" since the practice-performance-assessment approach promoted a high degree of satisfaction and confidence in the pupils and enabled the teacher to identify strengths and weaknesses during both the practice stage and the assessed performance. In other words, the test tasks were seen "as a vehicle, not only for pupils to display their proficiency in final performances, but also as a means of focusing on the development of pupils' skills." (Lee op.cit.: 74).

In addition, the practice element reflected the common experience of attempting to rehearse mentally what we want to say in a foreign language situation, particularly when we are not proficient in that foreign language.

The test activities were given as normal class tasks for the whole class to perform in pairs or groups, and then learners indicated if they wanted to be tested on them, i.e. perform in front of the teacher and receive a written assessment sheet from her. The class teachers were given a set script to follow when introducing the test activities. Additional tasks of a similar type and content were provided for those who did not want to do the test.

The tests were given three times a term, each at 3-4 weekly intervals, representing the sequencing of the course work as laid out in the syllabus.

4.3 Assessment criteria

If the testing were to be of any value, it was essential that the assessment form was comprehensible and potentially useful for learners, accessible and practical for the teacher to complete in class and, at the same time, captured the elements of oral fluency. Assessment criteria, such as 'range', 'flexibility', 'size', etc., now common in the more recent communicative proficiency tests, for example, U.C.L.E.S. Certificates in Communicative Skills in English, would be inappropriate for the intended users (learners and teachers). We chose, therefore, an analytic scale with fairly traditional components: communicative effectiveness, grammatical accuracy, fluency, vocabulary and pronunciation, each with a brief gloss on its meaning. We added an element of grading so that learners could receive a profile of their performance and clear indications of any areas which needed revision. A reproduction of the assessment form is given below (Figure 2) and the performance description of an 'average' Lower Elementary learner is given in the Appendix.

Figure 2: The Assessment instrument

ACTIVITÉ: *(Title of Task to be written here)*

Name...................................

Date...................................

	*EXCELLENT	#GOOD	NEEDS ATTENTION
Communicative effectiveness -getting your message across and understanding the answers			
Accuracy -the number of grammatical mistakes			
Fluency -the flow of speech and number of hesitations			
Vocabulary -the range and appropriacy of vocabulary			
Pronunciation -how foreign your accent sounds			

# appropriate for class level
* above class level

There was sufficient space for the class teacher to add a few comments on types of errors made e.g. tenses, articles, etc. which gave additional information to the learners for revision purposes. We hoped this would prove a motivational tool for the learners.

The assessment criteria and the practicality of the form were discussed and then trialled with teachers in the French section using video recordings of volunteer learners doing the tests. A standardisation session was held with the particular teachers concerned with the testing and the results showed 90% agreement on the grading.

4.4 Questionnaires and interviews

Data on the learners and their attitudes towards testing were gathered through pre-test and post-test questionnaires, and through post-test interviews with six learners. The teachers' views were also sought through interviews after the first test and at the end of term when the three test activities had been completed.

4.4.1 Pre-test questionnaire

This comprised sections on: learners' reasons for attending community classes, self-assessment on their oral communicative ability in French, attitudes to testing, and their opinion on whether oral tests should be offered in community classes. It was designed to be completed within class time and was, therefore, short and closed-ended but with space for comments.

Although self-assessment is outside the main area of our investigation, we included it for interest to see whether learners felt able to assess their ability to interact in French in certain basic situations (a sample of the type covered in the Lower Elementary syllabus). We did not intend to take it as a reliable indicator of the learner's ability, nor to replace the teacher's assessment: we recognise that many teachers and language testers are sceptical about the ability of learners to make reliable self-judgements, and that they may need guidance or training in self-assessment (Dickinson 1987). As the same self-assessment section was to be given in the post-test questionnaire, it would be interesting to see whether there were any discernible differences in the learners' perceptions of their ability.

In the section on attitudes towards testing, the learners were given a choice of five verbal statements with a positive and negative one at the two extremes. An extract from this section is given in Figure 3 below.

Figure 3: Extract from questionnaire on attitudes to testing

b) **Does the thought of having an oral test in French**

appal you ☐

arouse feelings of mild anxiety ☐

leave you indifferent ☐

give you a feeling of pleasurable challenge ☐

fill you with joy ☐

The statements were based on the kind of language and feelings expressed by the learners in the pilot stage - statements such as *" I loathe being tested"* and *" exams terrify me"*. Several studies have documented the strong anxiety that learners have about tests (e.g. Madsen 1982, Scott 1986). A study by Jones *et al.*, cited in Scott (1986:101), on the affective reaction by learners to language tests found that the major factor was

> *emotive reactions concerning how pleasant the experience of taking the tests was, how easy the tests were, how frustrating they seemed, how well the learners felt they performed, and how well the learners liked the tests.*

The fact that the statements also provided some amusement in the classes was welcomed in that it was in keeping with our wish to investigate the feasibility of testing without damaging the convivial learning atmosphere of community classes.

4.4.2 Post-test questionnaire

The post-test questionnaire, given to all the learners in the sample whether or not they took any of the tests, included the same self-assessment section and the attitudes to testing section as mentioned above. It also included questions on which of the three tests were taken, when they decided to take the test, and whether they thought the tests and the feedback assessment sheets were useful to them. The final question asked whether they thought oral tests should be offered in IALS community classes. The full post-test questionnaire is given in Appendix C.

4.4.3 Interviews

Interviews were held with six learners at the end of the course in order to supplement the data in the questionnaires. The responses in the learners' post-test questionnaires were used as a stimulus for discussion and elaboration during these interviews. Each of the two teachers was interviewed twice, once after the first test and then at the end of term when all the tests had been administered. These interviews were semi-structured, based on issues related to the areas of classroom management, the test items and the additional tasks, assessment of learners and attitudes of learners, both testees and non-testees.

The interviews were audio-recorded and transcribed, and information from them is discussed in the following section.

5. Results and Discussion

Data on the 18 learners who completed the post-test questionnaire is discussed below.

5.1 The number of testees and non-testees

Because of absences and the optionality of the tests, the number who took each test varies, as shown in Figure 4:

Figure 4: Learners taking each test: (N=18)

Test 1	Test 2	Test 3
No	No	No
No	No	No
No	No	No
No	No	No
No	No	No
No	No	No
absent	absent	Yes
Yes	absent	Yes
Yes	absent	Yes
Yes	absent	Yes
Yes	absent	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Yes	No	Yes
Yes	No	Yes
Yes	No	Yes

Of the 11 learners who decided to take the first test, all 11 also took the third test. However, only 4 learners took the second test, with 4 others being absent and 3 deciding not to take the test.

The reasons for taking the first test, as expressed by the learners in the questionnaire, are shown in Figure 5. Three learners left a blank space.

Figure 5: Reasons given by learners for taking Test One

to see my own ability
to get an idea of progress
to see my progress
useful experience/forced to think but not intimidated
to see how much I remembered
tests are necessary/makes you think when speaking
to practise speaking French
wanted to know my ability

It may be seen from these responses (actual statements given in the questionnaire) that these learners had a fairly positive attitude towards being tested. One learner expanded his comment in the interview:

> *...supposing you've got to speak to a native, you've got to know how you speak. I mean, you don't have books there, so you've got to really think about it. I mean, you can just practise reading out of books all the time. And you don't really learn from that. If you actually get tested, you'll make the effort and learn.*

Another, not very confident learner, admitted "*...I prefer writing to speaking but I think I need to be made to speak and this is a good way of making you speak.*"

The reasons given for taking the second test, by those learners who did in fact take it, were very much the same as the reasons given for taking the first test.

Figure 6 shows the written statements of those who took the first and third test, but not the second.

Figure 6: Reasons given by learners for not taking Test Two

didn't feel I would learn any more since I took Test One
3 tests too many in one term
not needed as another test planned for Week 11

The issue of the number of tests offered is discussed below in section 5.5 but the first statement is an interesting one, and on further investigation, it transpired that this learner felt that her oral performance had not "*changed much since the first one, plus I think that three tests in one twelve week term is a bit too much.*" Presumably the third statement reflected the same opinion - that an additional test was not felt to be needed.

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Looking back to Figure 4 we can see that there was a group of 6 learners who consistently chose not to take any test at all, and their reasons are shown in Figure 7 below:

Figure 7: Reasons given by learners for not taking any tests:

Test One	Test Two	Test Three
enrolled for pleasure, not to be tested	enrolled for pleasure, not to be tested	enrolled for pleasure, not to be tested
not interested from day one	not interested from day one	not interested from day one
my French is bad/ vocabulary too weak	missed too many classes due to work pressures	missed too many classes
not in a good mood	can't remember	not confident
I do not wish to be tested at this stage	I do not wish to be tested at this stage	I do not wish to be tested at this stage
I hate tests	I hate tests	I hate tests and do not need them

It can be seen from the above written statements that an individual's reasons for not taking a test were generally fairly consistent across the three tests. These learners had not only seen the tests, but practised them as a class activity, and agreed that the tests were very reasonable in terms of both familiarity of format (i.e. when compared with their normal class activities) and of demands made on the learner. One of this group said of the test tasks *"I think they were very good. I think it has been an interesting task"* but did not want to be assessed on them because *"I did not think it was important to me."*

However, not even this admitted non-threatening nature of the test instruments themselves induced those learners who had initially chosen not to be tested to change their minds. One learner who did take the tests offered her opinion on the non-testees *"I think ... well, most of the people in my class are ..late fifties, and they don't seem to be wanting to be tested. They'd rather, they're doing it for fun. And they're not bothered at how fast they're progressing, I think."*

Although age does seem to be a relevant variable in that the majority of testees were under 50 years old, the numbers in our sample are too small to draw any firm conclusions.

5.2 Learners' attitudes towards testing

Regarding the question 'How do you feel about having an oral test in French?' in the pre- and post-questionnaires, the learners' responses were as follows:

Figure 8 Responses on Attitudes towards Testing

Pre-Questionnaire Response	**Post-Questionnaire Response**	
1	1	*Non-testees*
1	1	
2	2	
2	2	
2	3	
2	1	
2	2	*Testees*
2	2	
2	4	
2	4	
3	2	
3	4	
4	4	
4	4	
absent	2	
absent	4	
absent	4	
absent	5	

1 = "appals you"
2 = "arouses feelings of mild anxiety"
3 = "leaves you indifferent"
4 = "gives a feeling of pleasurable challenge"
5 = "fills you with joy"

As we can see, there was a slight shift to a more positive attitude among the eight learners who opted to take some or all of the tests, and who completed the questionnaire. One learner had gone from "indifference" to feelings of "pleasurable challenge", and two had gone from feelings of "mild anxiety" to feelings of "pleasurable challenge". Surprisingly, one had changed her attitude from "indifference" to "mild anxiety" and we can only surmise that the oral tests experienced on the course were, for her, slightly threatening. Given that the test tasks were similar to class activities, that there was a preliminary practice stage, and that the assessment was conducted by the class teacher, we might have expected a greater shift in attitudes among more learners but the negative feelings about language tests seem to be deeply ingrained.

This is confirmed by the one of the teachers who talked informally with the class about the tests: "*they felt, they found the tests* [i.e. test tasks] *very interesting. It's just the fear about being tested.*" Even the word "test" seems to have caused some anxiety. One learner admitted: the teacher "*used the word 'test' and as soon as she used that I got a little bit apprehensive. I don't like the idea of having to take exams so I think if she had said 'assessment' I wouldn't have been worried.*"

It is interesting that there were two changes in attitude among the group of 6 non-testees, one from "mild anxiety" to "indifference", the other from "mild anxiety" to "appals you". Unfortunately, both left the class at the end of term and we were unable to investigate further.

5.3 Learners' views on the usefulness of the assessment profiles

The assessment forms (see Figure 2) were given to the learners on completion of the test. They provided the learners with a profile of their performance, i.e. an indication of their strengths and weaknesses. Of the 12 learners who took any or all of the tests, 11 stated that they found it useful and one left it blank on the questionnaire. As one learner said "*There's no point in doing a test if you don't get any feedback.*" One learner reported that she was pleased that the teacher's assessment

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confirmed what she thought and seven testees gave examples of how they acted upon it, such as working on grammar, vocabulary study, and general revision. *"I made a long list of the vocabulary we learned, and I tried to sort out the grammar we've done." "I went back to the notes I'd taken from the class."*

5.4 Learners' self-assessment

The pre- and post-questionnaire self-assessment responses provided some interesting results. As noted in the previous section, the purpose of the self-assessment questions was not so much to attempt any serious measure of learner ability but rather to see whether learners felt able to assess themselves, and if there was any change in their perceptions before and after the test activities. Figure 9 below shows the format of the self-assessment section on the questionnaires. (The section was identical in both the pre-test and the post-test questionnaires.)

Figure 9: Learner self-assessment section in questionnaires.

SELF-ASSESSMENT

How well do you feel you can do the following things in French (i.e. get your message across orally and understand the answers reasonably well)?

	easily	**with a little effort**	**with difficulty**	**not at all**
ask for things in a shop				
tell someone about yourself & your family				
give directions to a lost French tourist in Edinburgh				
order a meal in a restaurant				

Each learner assessed himself twice (once at the beginning of term and once at the end of term) on 4 different topics of the syllabus. Hence each learner had 8 opportunities of self-assessment. The self-assessment choices were coded as: "easily" = 1; "with a little effort" = 2; "with difficulty" = 3; "not at all" = 4. As we were more interested in changes of perceptions rather than individual ratings on each topic area, we calculated the means of the self-assessment ratings for the two groups (testees and non-testees) over all 4 topics:

Figure 10: Means of the self-assessment ratings

	Pre-questionnaire	**Post-questionnaire**
Testees	2.2 (N=32)	1.8 (N=48)
Non-testees	2.5 (N=24)	2.1 (N=24)

1 = "easily", 2 = "with a little effort", 3 = "with difficulty", 4 = "not at all"

Two points seem to emerge from the self-assessments. Firstly, the learners who did not wish to take the tests gave themselves a lower rating than those who did take the tests, both at the beginning of term, before the tests were offered, and afterwards, at the end of term.

Secondly, both groups perceived some progress in their ability. What effects, if any, the tests may have had on the way that the learners rated themselves at the end of term can only be speculation, but it does seem that, amongst the testees, taking the tests did not cause them to lower their self-ratings. Hence we might speculate that taking the tests did not have a negative effect on the learners' own perceptions of their competence.

5.5 Learners' views on oral tests in IALS community classes

Of the 12 learners who had opted to take any of the tests, 8 had filled in both pre and post-questionnaires. All 8 had started out by responding "yes" to the question "Do you think that oral tests should be offered in French community classes at IALS?", and all 8 again responded "yes" in the post-questionnaires.

Figure 11 below shows the responses of the group of six who chose not to do any tests during the course.

Figure 11: Responses to the question of having oral tests in IALS Community Classes by those who did not take any tests.

Pre-Questionnaire Response	Post-Questionnaire Response
no	optional
no	optional
yes	yes
yes	yes
no	yes
no	don't know

What is interesting here is that among this group of non-testees, there is some slight change in opinion. One changed his response to "yes", one to "don't know" and two changed to "optional". No "no" responses were received at all. We might speculate that the learners were simply being polite towards their teacher who, by this time, had clearly spent some considerable time and energy on classroom testing. Although this might well be the case, it is an interpretation which is not given any support by the learners' reasons for not taking any of the tests (see Figure 7).

These are very direct statements and do not, on the whole, appear to have been tempered by the wish to be polite to the teacher. (These reasons were given at the same time as the responses to the question "Do you think Oral Tests should be offered at IALS?", in the post-test questionnaire.)

Another possible interpretation is that these learners did not find the tests disruptive to normal class work, or at least they were not resentful that time was taken up with the tests - a view, however, not shared by one class teacher who felt rather guilty that *"it was, you know, robbing a bit of their time. They weren't being taught."*

We saw earlier (Figure 6) that a few learners felt that three tests were too many in one term. This view is perhaps understandable given that the classes meet only once a week for two hours in a 12-

week term, but it does not appear to be a view shared by the other testees since there were no other explicit comments on the number. The teachers, however, also felt that three were too many.

5.6 Teachers' views on the classroom tests

The practical considerations of running class tests are of utmost importance. Some of the points raised by teachers have already been mentioned but the main issues seem to relate to the role of the teacher as assessor, the time needed for the tests, and classroom management. The teachers also expressed their opinions on the value of formal assessment in the community classes.

5.6.1 Role of teacher as assessor and use of the assessment forms

The teachers are accustomed to assessing their learners' performance informally but one teacher commented that the explicit change in role from helpful class teacher to assessor, although intended to make the test situation non-threatening, caused a problem in that *"they* [the learners] *were expecting me to help them during the test"* and the teacher had to refuse.

Both teachers said they found the assessment form easy to use in class but experienced other difficulties regarding the concentration required to focus on one learner at a time while other class activities were taking place.

> *I found it very difficult... to listen properly to what the learners being tested were saying, with the other learners talking at the same time. I was trying to concentrate... but at the same time, I do it all the time, that's the point of being a teacher, you listen to everything at the same time in the class. And I got so used to it, you can't stop listening.*

One teacher, however, questioned the value of giving written feedback to learners in contrast to oral feedback. *"I think when I say during an exercise 'Oh, that was very good' or 'Yes, that was the right thing to say' or something like that, they enjoy it, you know, they appreciate it better than if I give them a piece of paper saying 'That was good. Pronunciation very good'."*

5.6.2 Time

One teacher reported that she had had difficulty in keeping to the time allocated to each test item as she felt she needed more time to assess the learners reliably; she did not like having to cut the testees short. This, however, did not seem to have been an issue with the other teacher, and in the pilot stage of this project when the items were pre-tested, we felt that the time allocated was sufficient for the learners to produce some sizeable talk. Both teachers commented that testing several pairs in the class took up a disproportionate amount of the actual lesson time although they agreed this might be more of a problem with large classes. It is interesting, however, that none of the non-testees made negative comments about either the time taken up with the learners who were doing the tests or the additional activities offered.

An additional point relating to the overall timing of the tests (every 3-4 weeks) is that one teacher felt it slightly disrupted the sequencing of her teaching programme. She preferred to choose the topics from the syllabus in an order appropriate to the needs and interests of her class rather than having a particular order imposed by the test topics.

5.6.3 Class management

The issue of having testees and non-testees in the class at the same time does not seem to have been a major problem except in the case of the teacher who felt a little guilty about not "teaching" the learners who were not being tested. The additional activities seemed to work well with the non-testees, attracting comments such as: *"good alternative"* and *"perfectly acceptable - gave me a chance to try and catch up"*.

Regarding grouping for the tests, one teacher felt that a pair containing a non-testee and a testee together put an unnecessary burden on the non-testee: *"I don't think it was fair somehow to ask them to take part in the test because they (the non-testees) felt it was not a favour they were doing their partners"*. In other words, the non-testees might feel they were not helping their classmates. This view contrasts with one expressed by a learner who wrote: *"assisted in the test - the practice was useful"*.

5.6.4 The role of formal testing in adult community classes

Both teachers felt that the test activities and the additional activities for non-testees were interesting and stimulated good oral interaction among their learners. They questioned, however, the need for formal assessment during an adult community course although they accepted the fact that it appeared to be of value to those learners who had opted to be tested. One teacher put herself in the position of a language learner and said: *"being told formally what my weaknesses are because I haven't succeeded in such and such piece in the test... would not help me because I would know before what are my weaknesses."* The other teacher also expanded on the theme of self-evaluation:

> *I don't think they need to be tested. I think they need, maybe, a kind of form at the end of term saying 'Now do you realise that you can say this, that'... something like that at the beginning of term... And then, at the end of term, 'So now what have you achieved?'.... They have to write down what they think about themselves... and it makes them realise better than a test, I think, what they can do because they write about themselves.*

These views suggest that the use of learner self-assessment is an area which merits further investigation.

6. Conclusion

The fact that, of the 11 learners out of 17 who took the first test (one learner was absent), all 11 voluntarily took the third test, seems to argue that the tests were not a negative experience for these learners and that they found them of value. This interpretation is further borne out by the reasons given by these learners for taking the tests, and also by various comments made by learners during interview.

What is interesting is that none of the learners who opted not to take the tests at the beginning changed their minds about taking the tests later on, despite their agreement that the tests were non-threatening and reflected normal classroom practice. At the end of term, these learners did, however, indicate that such tests should be offered in IALS community courses, something they had not agreed with at the beginning of term.

Concern over the frequency of the tests was expressed by some learners, and one teacher proposed an optional end-of-term test while the other favoured a self-assessment instrument rather than formal tests.

Those learners who took the tests found, without exception, that the assessment feedback form was useful to them. Learners who were interviewed also gave verbal testimonies as to the usefulness of the tests in general, three learners stating that one of the major benefits of this type of oral test was that they were actually forced into speaking, rather than just being able to say to themselves *"I can't do this"* or *"I'll have to look this up in the book"*. Two learners reported an almost immediate gain in self-confidence in speaking as a result of being *"forced to perform"* in this way.

Interviews with learners and teachers alike confirmed that the relaxed classroom atmosphere was not disrupted by the test. This was probably due in large part to the care which had been taken to integrate the tests into the normal classroom pattern. This was mimicked both by test activity-type and the fact of sitting in the same classroom, with the same classmates and teacher as usual although the change in role from class teacher to assessor can bring its own problems in a few cases.

The practical issues of administering the tests in class time, from the teachers' point of view, relate to the concentration required from the teacher in screening out the noise of others talking and the time taken out of lesson time for the test. The latter point, however, appears to be a concern of the teachers alone and was not evident from the learners' views. The fact of having testees and non-testees in class at the same time does not appear to have been a problem with the learners themselves because of the alternative activities offered.

The sample is too small to permit any general conclusions and results may be different with different language proficiency levels. Although the results are encouraging, we cannot claim that there is overwhelming enthusiasm for testing in adult community classes. However, we have shown in part that formal testing at this level of ability is possible within class time, as we believe that the difficulties encountered by the class teachers could be overcome through familiarity with and training in assessment procedures. We also believe that other forms of measuring learner progress and the issue of self-assessment are fruitful areas for research and development.

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APPENDICES

Appendix A:

Sample Test Activity (with accompanying advertising material - pictures and some text)

ACTIVITÉ 2: QUELQUES JOURS DE VACANCES ou UN PETIT VOYAGE

Vous êtes en vacances ensemble en France. Vous voulez faire un petit voyage ou faire une petite excursion.

Regardez les publicités et décidez ensemble

- où voulez-vous aller?
- que voulez-vous faire?

Comparez/discutez
- les hôtels
- les activités
- les prix
- autre chose....?

Vous pouvez faire des suggestions à votre ami pour le persuader.

Vous pouvez être d'accord ou pas d'accord.

Si vous voulez être testé, parlez ensemble pendant 3-4 minutes. ☺

Votre partenaire va vous écouter.

Appendix B:

Performance Description of a Lower Elementary learner

The learner possesses enough self-confidence to communicate in the target language well enough to be understood in simple situations and has enough resources to use a number of repair strategies. The learner is still short of vocabulary outside everyday needs and requires the cooperation of a patient, well-meaning listener.

Appendix C:

Post-Test Questionnaire

LOWER ELEMENTARY

As a follow-up to your French class this term, please could you help us by filling in this questionnaire:

Name: ______________________________ Date: ________________

1. The Assessments which we offered in class this term

Test 1.

- **Did you take the first test?** yes no
- **At what point did you decide to take/not to take the first test? (Please tick only one box)**

When I first heard about it (i.e. before I saw the test)

After I had seen the test activity

After we had practised the activity in class

Could you give your reasons for taking/not taking the first test:

Test 2.

- **Did you take the second test?** yes no
- **At what point did you decide to take/not to take the second test? (Please tick only one box)**

When I first heard about it (i.e. before I saw the test)

After I had seen the test activity

After we had practised the activity in class

Could you give your reasons for taking/not taking the second test:

Test 3.

- **Did you take the third test?** yes no

- **At what point did you decide to take/not to take the third test? (Please tick only one box)**

When I first heard about it (ie before I saw the test)

After I had seen the test activity

After we had practised the activity in class

Could you give your reasons for taking/not taking the third test:

2. Written Assessments

- **Did you find the assessment sheet(s) which the teacher returned to you useful?**

yes no

Are there any comments you would like to make regarding the feedback you were given? (e.g. Would you have liked other/more detailed information?)

- **Did you act on the assessment sheet(s) in any way?**
(e.g. more revision, use of Self-Access Centre, etc.) yes no

In what way, if any, did you act on the feedback?

3. While the others did the Test

- **If you decided not to do any or all of the tests, how did you feel about doing the alternative activities which you used while some of the class were being tested?**
(Please write your answer in the box below.)

4. Attitudes to being assessed in class

- **At the beginning of the term we asked you how you felt about having an oral test in French. How do you feel about it now? Does the idea....?**
  (Please tick only one box)

appal you

arouse feelings of mild anxiety

leave you indifferent

give you a feeling of pleasurable challenge

fill you with joy

If you have any comments to add, please write them in this box:

- **Do you think that oral tests should be offered in a French community class at IALS?**

yes

no

If you have any comments to add, please write them in this box:

5. Self Assessment

At the beginning of term we asked you how well you felt you could do the following things in French (i.e. get your message across orally and understand the answers reasonably well.) Without trying to remember what you put then, how well, at this point, do you think you can do the following things?

	easily	**with a little effort**	**with difficulty**	**not at all**
ask for things in a shop				
tell someone about yourself & your family				
give directions to a lost French tourist in Edinburgh				
order a meal in a restaurant				

6. **Finally, for research reasons, we would like to ask you the following information about yourself:**

What is your job?

Which of the following age groups do you fall into?

18-22
23-30
31-40
41-50
51-60
60+

Thank you very much.

WHOSE RELEVANCE?
INTERPRETATION OF HYBRID TEXTS BY A MULTIPLE AUDIENCE

Katalin Egri Ku-Mesu (DAL)

Abstract

With particular reference to Ghanaian English-language texts, the present study examines, from a Relevance Theory perspective, the problems involved in different audiences interpreting so-called hybrid texts. After clarifying the concept of hybrid texts and a brief summary of some of the key assumptions of Relevance Theory, the paper proceeds to examine contextualization, lexico-semantic variation, syntactic variation and proverbs, and explains why differences of interpretation may occur.

1. Introduction

Hybrid texts, i.e. texts written by authors of a particular cultural and linguistic background in the language of a different culture, often pose problems of comprehension (i.e. 'comprehension of a text of one variety of English within the context of situation of another variety'; Kachru, 1995:275), and hence interpretation (i.e. 'contextualization of the text within the variables which are appropriate for it within the context of its source language'; ibid.), for readers who do not share the author's cultural and linguistic background. Such texts have more than one interpretive context: (1) the surface meaning of the second language (in our case English); and (2) the underlying meaning of the first (or dominant) language of the author (Kachru 1986:166). Interpretation, then, is bound to be influenced by this underlying meaning, which Zabus refers to as 'the source language in filigree' (1991:155).

Although it is widely accepted that each individual and group should and will respond to a text differently, and that all responses are valid, communication between the Europhone African writer and his audience seems somewhat more complex than may be anticipated. This complexity is caused not only by the above mentioned nature of hybrid texts, but also by the general problem of (partial) lack of common ground between reader and writer. The African writer may claim to write for an African readership (which in itself is far from being uniform), but especially because he writes in a European language, he is likely to be conscious of a much wider multiple audience. The spatial, cultural, and perhaps temporal, distance between this multiple audience and the writer, combined with the already mentioned linguistic complexity, may lead to difficulties of interpretation that are usually not encountered outside this particular interpretive situation.

With examples taken from Ghanaian English-language literature, I shall here examine some aspects of this complex problem from a Relevance Theory perspective. The basic assumption of this theory is that human communication and cognition is governed by the search for relevance. Relevance itself is defined in terms of contextual effect and processing effort. Contextual effects are achieved when new information interacts with a context of already existing assumptions in one of three ways: (1) by strengthening an existing assumption; (2) by contradicting and eliminating an existing assumption; and (3) by combining with an already existing assumption to yield a contextual implication (i.e. a logical implication which can be derived neither from the new information, nor from the context alone, but only from these two combined.) Contextual effects cost mental effort to derive, which results in a trading relationship between mental effort and relevance: the greater the effort required to derive contextual effects is, the lower the relevance will be. At the same time, the greater the contextual effects are, the greater the relevance will be.

The processing (or mental) effort needed to understand an utterance depends on (a) the effort of memory and imagination required to construct a suitable context; and (b) the psychological complexity of the utterance itself. Greater complexity implies greater processing effort. If the extra linguistic complexity of an utterance is not balanced by extra contextual effects, it will diminish the overall relevance of the utterance. The source of psychological complexity can be found not only in the linguistic structure of an utterance, but also in the degree of its familiarity to the receiver and in the frequency of its occurrence. Linguistically simpler utterances may nonetheless be psychologically more complex if they are rarely encountered or are not familiar to the receiver (summary based on Wilson 1994:44-47).

The investigation I propose to carry out relates to how *real* readers interpret hybrid texts. Accordingly, the examples of contextualization, lexico-semantic variation, syntactic variation and proverbs examined here have been part of questionnaires I have used to research this problem area. Although in the body of the text no direct reference is made to specific findings of these questionnaires, it is partly these findings that form the basis of the conclusions reached here.

2. Contextualization

'The salient, visible traces [of the African mother tongue] with which the West African writer does sprinkle his text, as if to spice it up, are African-language words or phrases describing culturally bound objects or occurrences' (Zabus 1991:157). When the writer chooses not to translate or, to use Zabus's term, relexify these words and expressions, one method he can use is 'contextualization'. Providing areas of immediate context is 'heir to the burdensome informational digression verging on anthropological description' (Zabus 1991:158) whereby the African writer attempts to clarify the meaning of the African-language words for the non-African reader, and also for the African reader who possesses a different linguistic background, either by explaining the meaning in a dialogue using the ignorance of the local culture demonstrated by one of the characters, or by having the reader infer the meaning from the context. Involving the reader in such a guessing game, however, may pose problems.

In the following analysis I wish to take a closer look at contextualization and will try to explain why 'contextualization by inference' (Zabus 1991:162) as a means of conveying 'Africanness' may eventually prove ineffective.

The following passage is from the Ghanaian Akan-speaking Ama Ata Aidoo's *A Gift from Somewhere*:

> But do you know, this child did not die. It is wonderful but this child did not die. Mmm. ... This strange world always has something to surprise us with ... *Kweku Nyamekye*. Somehow, he did not die. To his day name Kweku, I have added Nyamekye. Kweku Nyamekye. For, was he not a gift from God through the Mallam of the Bound Mouth? And he, the Mallam of the Bound Mouth, had not taken from me a penny, not a single penny that ever bore a hole. And the way he vanished! Or it was perhaps the god who yielded me to my mother who came to my aid at last? ... was it not him who had come in the person of the Mallam?
>
> (p. 81; my emphasis)

The story is about a woman, Mami Fanti, who has already lost two babies soon after they were born. The text leading up to the above passage tells us that she is desperate as her third baby is about to die. She is called upon by a Mallam who is looking to earn some money so that he can buy food for himself. Sensing the tragedy about to happen, the Mallam tries to comfort Mami Fanti by promising her that this child will live. He helps to resuscitate the baby but has little, if any, faith in succeeding, so he disappears before Mami Fanti can give him money for his services.

Our interest in the above passage lies in what is communicated to the reader by the name Kweku Nyamekye, which, in turn, will depend on the implicit contextual assumptions the reader can recover and on the implicit conclusions he can derive. Some implicit assumptions can be expected to be recovered by all readers, but as we shall see, there is considerable variation in potential assumptions between the Akan-speaking Ghanaian reader and the non-Akan-speaking western reader.

To find out what sense the name Kweku Nyamekye makes to the reader, i.e. how relevant it is, we have to consider the processing effort required to understand it and the contextual effects achieved. As we have seen, the processing effort depends on two main factors: a) the effort of memory and imagination needed to construct a suitable context; and b) the psychological complexity of the utterance (Wilson 1994:45). The Akan-speaking Ghanaian reader immediately knows that implicit assumptions about the concept and practice of giving personal names must be used to process this utterance. The name Kweku Nyamekye gives him access to his encyclopaedic information about day names or soul names derived from the name of the tutelary god of the day of the week on which the child is born (Egblewogbe 1987:190), Kweku being the name given to a boy born on Wednesday, and, more importantly, about names suggesting exceptional circumstances. Nyamekye means 'god has given', and this name is given to a much awaited child who is believed to be the gift of God. In addition, a child who has no father to be named after either because the father refuses to accept the child, or because the mother is reluctant to name the father, or because the father is no longer present physically (dead or left the mother of the child forever), may be named Nyamekye by his mother or uncle. Since the Akan-speaking reader has immediate access to all this information, the effort needed to construct the suitable context is minimized. The psychological complexity of the utterance is also limited not only because the linguistic structure of the utterance is fairly straightforward, but also because both words, Kweku and Nyamekye, are frequently encountered ones, which makes the full name fairly easy to process. Consequently, the relative lack of complexity of the utterance leads to no distraction from relevance.

Contextual effects, on the other hand, are 'achieved when newly presented information interacts with a context of existing assumptions in one of three ways: by strengthening an existing assumption, by contradicting and eliminating an existing assumption, or by combining with an existing assumption to yield a contextual implication: that is, a logical implication derivable neither from the new information alone, nor from the context alone, but from the new information and the context combined' (Wilson, 1994:45). The name Kweku Nyamekye is especially relevant to the Akan-speaking reader because it interacts with his existing assumptions about the world, i.e. it has contextual effects. It not only strengthens his existing assumptions, but combining with the assumption concerning a 'fatherless' child it may yield, or at least forecast, the contextual implication that Kweku Nyamekye is a child not very much favoured by his father, a fact that we learn only towards the end of the story.

As we have seen, the Akan-speaking reader has immediate access to his encyclopaedic entries for personal names, which then triggers easy and quick processing of the information. Therefore he is distracted from relevance if the name Kweku Nyamekye is explained explicitly. It is unnecessary for him to spend time processing the contextualization in which the assumptions needed to understand the name are made explicit. By contrast, for the non-Akan-speaking western reader, for whom the name Kweku Nyamekye may prove to be entirely incomprehensible, the rewards for processing the contextualization following the name may be great. It may be assumed that the non-Akan-speaking western reader's cognitive environment, i.e. the set of assumptions that are manifest to him, does not include implicit assumptions about 'talking' names. For him Kweku is a first name, a string of sounds used to identify a particular person, whereas Nyamekye is taken to be a surname indicating this particular person's kinship with the father. Because of his unfamiliarity with the structure and functions of Ghanaian personal names, the non-Akan-speaking western reader, and for that matter, the non-Akan-speaking non-Ghanaian African reader who may be familiar with the concept of 'talking' names but who, due to his lack of knowledge of the language involved, cannot understand the meaning of this name, is sure to welcome the contextualization which makes explicit the assumptions necessary to understand the importance of the name and the reasons behind giving it to the child in the story. The contextualization, then, becomes informationally useful (i.e. achieves relevance) for the non-Akan-speaking reader not only because the explicitness of the information considerably reduces the processing effort, but also because the newly presented information interacts with the context of his existing assumptions about the structure and meaning of personal names by contradicting and eliminating them, i.e. it has contextual effects.

In a literary text contextualization proves to be a highly relevant way of providing information especially because of its unintrusive nature. However, the above example seems to suggest that contextualization in hybrid texts does not fully achieve its aim of explaining or clarifying meaning. As has been shown, for the Akan-speaking reader the contextualization is superfluous, may halt the flow of reading, distract from relevance and consequently create the impression of the text being dull. On the other hand, though the non-Akan speaking reader benefits from the contextualization in that it may be his only source of information that can lend some kind of relevance to the name Kweku Nyamekye, because his cognitive environment does not contain assumptions about the concept of Ghanaian personal names, the new information is not able to combine with an existing assumption to yield a contextual implication. It means that the non-Akan-speaking reader will lose out on recovering the subtle details that lead to a full(er) understanding of the story. In short, though contextualization has advantages for the reader who does not share the author's sociolinguistic background, it ultimately proves inadequate because of the shortcomings it represents both for this reader, and especially for the one who possesses the same background as the writer.

3. Lexico-semantic variation

In his discussion of the lexico-semantic variation found in Nigerian English, Bamiro summarizes Bokamba's (1982:91-92) observations relating to the sources of lexical innovations in African English as follows:

> Bokamba quite correctly points out that the sources of lexical innovations in African English are mother tongue interference, analogical derivation based on English and the milieu and conditions under which English is learned and used in Anglophone Africa.
>
> (Bamiro 1994:48)

While the reader who shares a particular author's sociolinguistic background will have no problem in processing and understanding such innovations, the reader who does not is likely to miss out on the meaning of the majority of them. Consider the following few examples:

(i) coinage

> ... we were defeated before we went, for we had heard that some people employed secondary school students to sit the exams for them, while others bought exam papers from the right quarters, and yet others knew the people who marked the papers! True enough, many of us bombed (Duodu, *The Gab Boys*, p.120; added emphasis)
>
> *to bomb (an examination)*: schoolboy slang for 'to fail' (Sey 1973:75)
>
> Young push-babies with frowning faces broke through hedges behind different kind of carriages ... Another black push-baby passed, pushing a white and pink carriage. (Armah, *The Beautyful Ones*, pp.125-126; added emphasis)
>
> *push-baby:* a maid servant employed to mind babies in the house and take them out for rides in prams (Sey 1973:88)

(ii) lexical items with semantic restriction

But I'd never thought I was an 'adolescent'. I usually thought of myself as a 'guy' (Duodu, *The Gab Boys*, p.73)

guy: a tough man; one who gives the impression of being fearless; one admired for defying popular authority (Sey 1973:94)

(iii) lexical items with semantic extension

It's only bush women who wear their hair natural. (Armah, *The Beautyful Ones*, p.129)

bush (adjectival): unpolished, uncouth, rustic (person) (Sey 1973:98)

Though lexical innovations can be assigned a varying number of categories, depending on the criteria applied to the analysis of their origin - Sey (1973) works with six basic categories, Bamiro (1994) with ten - the reason behind the failure of the non-indigenous-language-speaking non-local reader to understand these lexical items seems fairly uniform. Such a reader's assumptions will be less than adequate about the author's physical, social and linguistic background, i.e. his cognitive environment will contain no, or only a very limited number of, assumptions regarding the author's physical, social and linguistic reality, which will impose a serious restraint on the achievable contextual effects. In addition, the so far unencountered lexical item, or an already known word used in an unusual context, represents psychological complexity which increases the processing effort, thus reducing relevance and eventually hindering understanding.

It has to be noted, however, that contextualization, which may fail to be effective in the case of African-language words, is likely to prove successful in the case of lexico-semantic variation because the context does, in many cases, help to determine the actual meaning of words resulting from lexical innovation.

4. Syntactic variation

'The relexification of one's mother tongue, using English vocabulary but indigenous structures and rhythms' (Todd 1982:303) resulted not only in lexico-semantic variation in West African, hence Ghanaian, English, but also produced syntactic patterns that reflect the structure of indigenous languages. From among the examples described and analysed by Bamiro (1995) I would like to examine a) the thematization of complements and adjuncts, and b) the word order in nominal group structure.

a) *Thematization of complements and adjuncts*

Bamiro observes that in the Ghanaian Ayi Kwei Armah's novels there is a 'preponderant use of marked structures which reflect the underlying logic of the authors' mother tongues' (1995:198). The following example is taken from Armah's *Two Thousand Seasons*:

> 'This is the white men's second wish,' Isanusi continued. ... The elephants they say they want destroyed, but only for their tusks. ... Leopards they want dead for their hides. ... Land they want from us, but not the way guests ask the use of land. ... On this their cut-off land they would like to have crops grow. But the white man are not accustomed to doing their own planting and it is not in their minds to get accustomed here. They would have the king give them men to work the land ...

(p.82; emphasis added)

In his *Introduction to Functional Grammar* Halliday states that 'the Theme can be identified as that element which comes in first position in the clause' (1985:39). It is what the clause is going to be about; and from the point of information structure this is the 'GIVEN element, expressing what the speaker is presenting as information that is recoverable to the hearer from some source or other in the environment - the situation, or the preceding text' (Halliday and Hasan 1976:326; original emphasis). The rest of the clause is identified as the Rheme, that which tells about the Theme, the 'NEW element, expressing what the speaker is presenting as information that is not recoverable to the hearer from other sources' (ibid.). Halliday (1985:45) further posits that in the grammar of English it is the Subject that is chosen as the unmarked Theme of a declarative sentence, and anything other than the Subject in Theme position is identified as a marked Theme. A marked Theme is realized in the fronting of clause elements which would normally not occur in initial position: usually it is an adverbial group or prepositional phrase functioning in the clause as adjunct; very rarely is it a complement - a nominal group that could be functioning as Subject, but is not.

According to Bamiro, many West African languages are topic-prominent, therefore a preference for the thematization of complements and adjuncts can be observed in these languages, which, in turn, is reflected in West African English (1995:198). In the above example the complements 'the elephants,' 'leopards,' 'land' and the adjunct 'on this their cut-off land' are thematized. The reader's difficulty here is seen not in terms of contextual effects but rather in terms of processing effort. The reader who shares Armah's Akan background is likely to process the above utterances with absolute ease and may miss the point that is expected to be recovered from the extra contextual effects yielded by the greater processing effort required to process the marked Theme. Indeed, if the complements and the adjunct are fronted as a result of mother tongue interference and not as a result of a conscious choice on Armah's part, then there are no extra contextual effects to recover. On the other hand, if Armah consciously foregrounded these elements, then he surely intended to make his point salient about what the white man wanted to grab and destroy in his greediness. The non-Akan speaking English reader, faced with the extra linguistic complexity of the marked Theme, has to employ greater processing effort, but his effort is likely to be counterbalanced by the extra contextual effects mentioned above. If, however, Armah consciously fronted the complements and adjunct not because he wanted to convey an implicated meaning but simply because he wanted to retain the flavour of African speech, the Akan-speaking reader may merely overlook this subtlety, and the non-Akan speaking reader may read more into the text than it is supposed to convey.

The reader certainly has a difficult task in trying to recover the intended meaning. In Armah's case one finds an indication in another of his novels, *The Healers*. While in *Two Thousand Seasons* the following marked structure is recurrent,

> Two girls tried to help the pathfinders: Noliwe and Ningome were their names. (p.54; added emphasis)
>
> There was a woman. Idawa was her name. (p.69; added emphasis)
>
> This woman - Akole was her name - said ... (p.78; added emphasis)

in *The Healers* a character who is a native speaker of English prefers to use the unmarked form:

> This queen - her name is Victoria - has ears that hear everything that goes on everywhere in the world ... (p.201; added emphasis)

This seems to suggest that the marked structure is Armah's conscious choice, but his reasons for this choice cannot be unambiguously recovered from the text.

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b) *Word order in nominal group structure*

Just like in the case of thematization of complements and adjuncts, psychological complexity resulting from structural unorthodoxy stands in the way of smooth and effortless information processing in the following examples:

> The morning following, Densu was weak but his mind was peaceful. (*The Healers*, p.142; added emphasis)
>
> The day following, the travellers spent resting. (*The Healers*, p.152; added emphasis)

Bamiro suggests that this order within the nominal group, in which the head precedes the modifier in certain syntactic environments, reflects the syntactic structure of Kwa and Gur languages, to which many West African languages, among them Akan, belong (1995:201). He informs us that 'The day following' actually translates in Akan as

Eda	*a etoso*
The day	following.

It has to be noted here, that in Armah's case, though an influence of his mother tongue and possibly of other indigenous languages is the first logical explanation, his familiarity with and proficiency in French makes interference from French possible.

Whatever the source, the reader is faced with a non-standard form which, again, may, or may not, cause processing difficulty. Similarly to what happens in the case of thematizing complements and adjuncts, the Akan-speaking reader is likely not to discern the anomaly and may process the utterance at minimal effort. At the same time, the non-Akan-speaking reader's expectations will be influenced by the fact that in the grammar of English postmodification of the noun phrase is possible with the *-ing* participle, but the 'antecedent head corresponds to the implicit subject of the nonfinite clause' (Quirk *et al.* 1985:1263). From this follows that 'the morning following' and 'the day following' will be felt incomplete by the non-Akan-speaking reader, and he would probably spend considerable time and effort to look for structures like 'the morning following his sleepless night filled with nightmares' or 'the morning following their arrival' before sorting out the meaning of the noun phrase. Though finally not incomprehensible, this structure distracts from relevance because the reader's time and effort spent on processing it will not be rewarded by extra contextual effects.

5. Proverbs

In hybrid literary texts, together with riddles, dirges, praise names and different forms of address, one relatively often encounters proverbs. All of these constitute what Zabus calls the ethno-text, 'which is grafted on the European-language narrative, in an attempt to recapture traditional speech and atmosphere' (Zabus 1991:133). As the relexification, defined by Zabus as 'the making of a new register of communication out of an alien lexicon' (1991:102) and operating 'from one language to the other within the same text' (1991:106), of proverbs and idioms is one of the devices of nativizing rhetorical strategies (see Kachru 1987), proverbs are part of the linguistic realization of distinctiveness, and, as such, are convenient for the study of how the reader makes sense of a text which has more than one interpretative context: 1) the surface meaning of the second language (English); and 2) the underlying meaning of the first (indigenous) language.

Understanding proverbs has a number of complications. First, most proverbs can be understood both literally and metaphorically. Second, proverbs are so-called echoic utterances echoing the thought, or if you like wisdom, of a people, so a proverb can achieve relevance simply by demonstrating that someone finds it wise to quote in the circumstances. Third, by representing popular wisdom 'in a manifestly sceptical, amused, surprised, triumphant, approving or reproving way, the speaker can express her attitude to the thought echoed, and the relevance of her utterance might depend largely on this expression of attitude' (Sperber and Wilson 1995:239).

However, what needs to be considered first is the relationship between the thought that is to be communicated and the propositional form of the utterance which is used to represent this thought. For the proverb **Hail has shown the strong man the way home** (Tshiluba, Zaire; oral source Betu Ku-Mesu) this relationship can be represented as follows:

Level 1: The thought

Misfortune will drive you to seek support from the very people (usually your family) whom you have ignored.

Level 2: Representation of the thought in L1

MVULA WA MABUE WA KALEJA KALUME KUABO.

rain of ice has shown strong man home

Level 3: Relexification of Level 2 in English

Hail has shown the strong man the way home.

According to Relevance Theory, an utterance is strictly literal if its propositional form (Level 2) is identical with the propositional form of the thought it is used to represent (Level 1). However, what a communicator often aims to achieve is not literal truth but optimal relevance, as is the case when quoting a proverb. In order to achieve optimal relevance, the utterance 'should give the hearer information about that thought which is relevant enough to be worth processing, and should require as little processing effort as possible' (Sperber and Wilson 1995:233). As illustrated above, this can be achieved if the propositional form of the utterance shares some, but not necessarily all, of the logical properties of the propositional form of the thought whose interpretative expression it is (see Sperber and Wilson 1995:233).

As shown by our previous examples, another important factor is the set of assumptions the hearer/reader can provide to arrive at the intended interpretation. The greater the number of assumptions provided, the closer to the intended meaning we get.

In hybrid texts, which are characterized by the absence of the original, the reader has to make do with the English version of Level 3 relexified from the indigenous language. However, the surface meaning of the European language does not always yield the underlying meaning of the first language. It seems that in addition to Relevance Theory, some semantic considerations may provide helpful insight into why this is so.

First of all, 'it seems to be an incontrovertible principle of semantics that the human mind abhors a vacuum of sense, so a speaker of English faced with absurd sentences will strain his interpretive faculty to the utmost to read them meaningfully' (Leech 1974:8). From this follows that an audience whose sociolinguistic context is different from the communicator's will, by rule, attempt to make sense of the communicator's utterance, and that in this attempt the members of this audience will inevitably rely on *their existing* assumptions about the world. These assumptions, as we have seen, may, or may not, coincide with the assumptions necessary to arrive at the intended meaning of the communicator. Even if the assumptions of the communicator are different from those of his audience, the audience embarks on constructing a context in which the utterance becomes meaningful *to them*.

Second, it is assumed by semanticists that 'the same basic conceptual framework is common to all languages, and is a universal property of the human mind' (Leech 1974:15). Connotative meaning, however, is open-ended, embracing objectively and subjectively identified characteristics of the referent, and as such, may be considered, among other things, culture related. While the intended meaning of the proverb **Hall has shown the strong man the way home** may be guessed by the non-Muluba English-speaking reader, it is more likely that his interpretation will differ from the original meaning due to differences in connotative meaning. The Tshiluba word *kalume* connotes the rather negative image of a braggart boasting about his strength, success, achievements and victories over people. At the same time, the English collocation *strong man* tends to be associated with the positive values of determination and perseverance. Similarly, *home*, or *the way home*, can be associated with goal, success and achievement, a meaning that the Tshiluba *kuabo* (whose literal meaning is better represented by the French *chez eux*) does not have. Further modification of meaning may result from English being a second/foreign language for the audience, as well. It is not unlikely that the connotative meaning of an English word should get influenced by the connotations attached to the reader's mother-tongue equivalent of that word.

6. Conclusion

On the basis of the above discussion it may be concluded that 'otherness', expressed through the medium of English (paradoxically, itself the 'other' tongue as opposed to mother tongue; see Zabus 1991:1-10) inherently possesses the potential for Janus-faced relevance: 'mother-tongue relevance' on one side and 'other-tongue relevance' on the other. 'Other-tongue relevance' results from the reader building up a context by providing assumptions derived from the propositional form of the (Level 3) other-tongue representation of a thought, violating the underlying meaning of the invisible but discernible mother-tongue original. This process of reading as construction by the non-indigenous-language-speaking non-local reader shows that 'variation in potential assumptions is especially great between different cultures' (Blass 1990:85), which may have implications for the reception and critical evaluation of Europhone African literature by a multiple reading public.

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TALKING THE TEST: USING VERBAL REPORT DATA IN LOOKING AT THE PROCESSING OF CLOZE TASKS

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Abstract

This paper discusses the use of verbal report procedures as research tools, with reference to the writer's own investigation of the cognitive processes of second language cloze test-takers. The credibility of introspective data, and issues of informant training, language of reporting, and interviewer behaviour are considered. An alternative procedure called annotated cloze (AC) is also described and its pros and cons are discussed.

1 Introduction

In this paper I look at verbal reports as a source of insight into 'invisible' cognitive processes. I outline the more common verbal report procedures and discuss various aspects of their use in gathering data, as well as their application (and that of an alternative data-gathering procedure) to my own study of cloze test-taking behaviours. It is hoped that this paper will be of practical value to anyone contemplating the use of verbal report data in her or his own research.

My motivation for adding yet another study of cloze to the pile was simply that I wanted to know what this procedure - used in virtually every institution that I have taught in - might be measuring. Previous studies of cloze have tended to focus on the extent to which test takers successfully recover the words deleted from the passage - in other words, their score. While measures of cloze success tell us how well a given test has discriminated among those to whom it was administered, they reveal little about the processes actually involved in arriving at the successful recovery of deleted items. At the level of everyday test administration this may seem unimportant, but it has been argued (Bachman 1990) that before we can evaluate a test's validity we must have some insight into the construct the test is held to measure. Despite the enormous number of statistical analyses of the end-products of cloze test-taking, the question of what aspect(s) of linguistic proficiency cloze measures is (J. C. Alderson, personal communication) still very much open.

What all variants of cloze involve is the deletion, on a pseudo-random or rational basis, of textual items - classically individual words. Cloze has been variously identified as a measure of textual readability, an index of reading comprehension, and a measure of overall language proficiency in the target language. My hope is that cloze test-taker's 'real time' reports of their own task processing may provide some insight into the demands cloze makes on the individual.

2 The rehabilitation of introspective data

Verbal reporting is the most widely used means of eliciting introspective data - that information which informants provide about their own internal mental processes or states. I will not outline here the history of verbal report procedure as an investigative tool, for this is adequately reviewed in Matsumoto (1993) and Pressley and Afflerbach (1995). The main point is that, after several decades of rejection on the ground that they were insufficiently empirical, introspective procedures are once again widely accepted as legitimate data-gathering tools.

A key event in the rehabilitation of the notion that individuals can provide useful and valid information about their own mental operations was the publication of Ericsson and Simon (1984), which argued the case for employing verbal report procedures, in particular that known as 'think-aloud', to elicit data which cannot readily be accessed by other means. Ericsson and Simon's model of verbal reporting holds that concurrent verbal report tasks such as think-aloud do not significantly interfere with the cognitive processes being reported. Their argument has been widely (and at times perhaps a little uncritically) adopted as a rationale for the use of verbal report procedures in a wide range of investigative contexts.

The crux of Ericsson and Simon's thesis is their claim that individuals can reliably report the currently active ('heeded') contents of their short-term memory[1], and that even recent cognitive operations, such as the previous steps in a problem-solving process, may be reliably recalled. Given the right stimulus, then, informants can provide valid information about their own mental processes while engaged in problem-solving tasks such as reading difficult L1 text, processing foreign language data etc.

Nisbett and Wilson's 1977 counter-argument to the use of verbal report data - that much of an individual's cognitive effort takes place below the level of conscious attention and is therefore unavailable for reporting - is to some extent deflected by Ericsson and Simon's careful delimitation of the kinds of internal data which may in their view be externalised: the most reliable verbal reports reflect just what is currently active (that is, being consciously attended) in short term memory at the moment of reporting. One corollary of this is that descriptions or explanations of cognitive processes are inherently less credible than 'raw' process data itself. By way of illustration, here (from my own data) are extracts from a verbal report by an individual attempting to work out the meaning of 'sukkari' in the Japanese sentence: 'Moo sensei no shigoto ni sukkari nareta' ('I've now got used to teaching.') In the first segment, the informant's verbal report looks very much like an unfiltered, moment-by-moment externalisation of his flow of thought:

> *umm* moo *now?* sensei *okay teacher ah* ... *teacher* no *teacher's work okay* sensei no shigoto ni *for? in?* sukkari ... sukkari nan desu ka? (*what's* sukkari?)

Data such as these are, Ericsson and Simon suggest, highly credible by virtue of this very lack of analysis. The obvious metacognitive refinement reflected in the following segment, however, would in their view render its data rather less convincing:

> sukkari sukkari *umm don't know this one maybe it's from* suki *to like hmm it must be an adjective because of the ending eh maybe I've come to like working as a teacher? or teaching has become likeable? it has a positive feel to it anyway (laughs)*

As the above extracts suggest, most of my informants' verbal reports comprised a fluent mixture of unmediated thought-fragments and more or less considered analysis. If this blend of raw and refined cognition is a mark of naturalistic task processing[2], we ought perhaps to be cautious about trying to sift out supposedly suspect metacognitions from the flow of verbal data.

Furthermore, the data I have collected suggest that for some informants analysis and hypothesis-making, as in the second extract above, represent a definite interruption to the processing task: textual processing seems to stop and to be taken up again at a non-contiguous point. Other informants, however, appear to be able to superimpose a higher level of analysis at minimal cost to their performance of the processing task. In the light of this, it may be difficult to view raw and refined data in the same terms for every verbal report subject.

The caveats above applies less strongly to retrospective verbal reports (see below) for here the danger of informants (re)constructing - rather than recalling - their cognitive processing is almost certainly greater. Ericsson and Simon note that an informant, asked why she phoned her mother the night before, will commonly offer some reason for the action, even if she had no conscious motivation for it at the time. Questions about *why* a cognitive event occurred are seen as particularly likely to invoke reconstruction, and must therefore be used with caution.

2.1 What verbal report procedures involve

Verbal report data-elicitation procedures take a variety of forms. Informants can be asked to verbalise about their cognitive operations while carrying out a task (concurrent verbal report), or after the task has been completed (retrospective verbal report). It is worth pointing out here that verbal report procedures need not elicit only oral data: informants may also (as in Bailey's 1980 use of diary entries) report in writing on their cognitive behaviour, or (Cohen and Cavalcanti 1990) be asked to fill out 'open-ended' questionnaires.

Research using concurrent verbal reports has frequently combined some form of think-aloud task with a post-task interview. Think-aloud procedure typically requires the informant to keep up a more or less uninterrupted stream of verbal data while engaged in a particular task, ideally externalising as much of her task-related cognitive processing as she can, and it has been used to investigate general reading strategies (Block 1986), lexical inferencing, or the guessing of unknown vocabulary meaning (Haastrup 1991), translation (Krings 1988) and C-Test-taking processes (Feldmann and Stemmer 1987). With the possible exception of Block 1986, all of these studies used think-aloud to capture informants' cognitive processing more or less in real-time. In Block's study informants interrupted their processing at pre-set times in order to report on what had just occurred, which might better be seen as 'immediate retrospection'.

Real-time think-aloud reporting generates the largest volume of raw cognition. In part directed at the informant herself, and hence often difficult for another to follow, this data may require significant clarification. It is axiomatic that this should take place while the informant's task processing is still fresh in her mind, so that any post-task interview should follow as swiftly as possible. This leads to something of a dilemma: the researcher needs time to identify points of interest within the data, and yet the more time spent in doing so, the greater the risk that the informant's memory of her task-processing will have faded and the greater the chance that she will, however innocently, reconstruct rather than recall this when interviewed. The procedures I recommend in the appendix may ease the task of noting points requiring later attention, thus allowing the earliest possible retrospective interview.

2.2 Problems in the use of verbal report data

Perhaps the most serious drawback in using verbal report procedures - in particular concurrent reporting - is the very large volume of data that can result. The audio tape think-aloud protocols that I have gathered of informants' completing 40-item second language cloze passages provide a rich record of how they went about the task, but the transcript of a single tape (the average duration of recordings was just over 25 minutes) can easily run to twelve or fifteen pages of typescript. Moreover, the task of transcribing concurrent verbal report protocols is extremely demanding in terms of concentration as well as time: substantial stretches of a protocol may be acoustically very unclear, and several close listenings may be required to adequately decipher the content.

Some verbal report formats have the effect of limiting the amount of data elicited, or maximising the clarity of what is reported. Block's (1986) investigation of reading strategies, in which informants reported only at the end of each sentence in the stimulus passage is one example. Haastrup's (1991) investigation of lexical inferencing (i.e. guessing unknown vocabulary in a text) used a 'dyad' reporting format, in which two informants worked through an L2 passage more or less in tandem, sharing, discussing and evaluating information and inferences. Both discontinuous reporting as in Block's study and dyad reporting as in Haastrup's tend to generate data which is acoustically much clearer.

My own data-gathering trials, however, suggest that these formats may bring problems of their own. While sentence endings appear (Taft 1991) to be the loci of much of the higher level processing of text - such as the integration of discrete facts or notions into an overall text format - protocols generated by informants required to think aloud only at these points can seem rather disjointed and hard to follow. I also found it necessary to give reminders to 'keep talking' rather more frequently in this condition, and it may be that a format which allows verbal reporting to be switched off between sentence endings also makes it more likely that informants will forget to switch it on again.

Nor was dyad-condition reporting without drawbacks. Paired informants were observed to avoid reporting information which they thought their partner also had access to, and often failed to mention, inferences which they would also draw. Post-task interviews with (individual) informants elicited information and inferences which the informant claimed to have used in recovering deleted items, but which she had not reported during the paired task; these lacunae were often justified on the ground that there was no reason to tell a partner what she already knew[3]. Given the semi-conversational nature of dyad reporting tasks, it is not surprising that they appear to obey the Gricean maxim of economy.

One further limitation of the dyad format is that certain processing behaviours quite common in the solo think-aloud protocols I collected were more or less absent from those elicited from paired informants. These included the verbatim reading aloud of (often fairly long) stretches of the cloze passage, the 'sounding out' of alternative filler words, and the temporary substitution of nonsense words or sounds for deleted items. The range of processing behaviours open to individual informants, then, may not be adequately reflected in dyad reporting. In the last analysis, test-taking is normally a solitary activity, and the nature of the task is perhaps best maintained by having informants report individually.

2.3 Other aspects of data-elicitation

The choice of a reporting format is accompanied by other procedural decisions. How should the task passage - or other stimulus - be selected? Should informants be offered any training in verbal reporting? In which language should informants report?

2.3.1 Setting a task

In my own data-collection, a fair amount of trialling was required in order to find a productive elicitation text. While I could identify no clear relationship between a passage's difficulty, as measured by readability formulae, and the amount of verbal reporting it stimulated[4], it soon became clear that the passage had to be challenging enough to force informants to use a representative sample of their problem-solving abilities. Where the level of difficulty is low, (in cloze, for example, when the passage contains many deletions recoverable via syntactic knowledge alone), there may be very little in the way of conscious processing to be externalised. It may, then, be better to err on the side of passage difficulty. Naturally, the topic of the stimulus passage must be compatible with the assumed background knowledge of one's informants. While there may be marked discrepancies between the background knowledge one assumes will be available to a given group of informants and what they actually possess, it is hard to see how prior knowledge can be formally assessed without affecting the authenticity of the subsequent data-elicitation task. Caution in selecting the passage topic may be advisable.

2.3.2 Informant training

The question of whether to train one's informants in verbal reporting merits careful thought. On the one hand, few if any informants will have been asked to perform a verbal report task before, and they will typically be very unsure of what is expected of them. Clear instructions are thus vital, and some sort of orientation session may be helpful. There is, however, (Haastrup 1991) a real risk of bias if informants are induced to alter their spontaneous processing behaviour to match that modelled in pre-task training; the very novelty for most informants of the think-aloud task may well magnify this danger. A workable compromise is to have potential informants attempt, without any external modelling, a short verbal report task broadly similar to that used in the actual data collection. During this phase informants are encouraged to report in more detail, but are given no guidance in how to go about this; any resulting changes in their task-processing behaviour will then at least be internally generated.

Pre-task orientation of this type can also help to minimise what I call the cold start effect, whereby informants attempting a think-aloud task for the first time may be unable to report in much detail, and only warm up, as it were, some way into the task. An orientation session may also allow the researcher to exclude any informants who produce little or no think-aloud data. This idea of sidelining potential informants may seem like poor empirical practice, but it can be defended on two grounds. Firstly, the risk of bias is minimised by the fact that the criterion for exclusion is the failure to provide data, rather than the kind of data that is provided. Furthermore, even if non-reporters are able to retrospect in detail about their task processing, there will be no concurrent data against which to evaluate these retrospections. Such triangulation of data from different sources is a desirable (Fielding and Fielding 1986) aid to the validation of research findings.

2.3.3 Language of reporting

My informants to date have mainly been speakers of German, simply because this is the second language in which I am most fluent. In a number of earlier studies using verbal report data (e.g. Block 1986), informants were required to verbalise in a second language - i.e. the first language of the researcher. Setting a second language as the language-of-reporting, of course, carries the rather obvious risk that those cognitive operations which the informant cannot adequately report in her L2 will simply go unrecorded. In my own data-collection informants were allowed to verbalise in German or in English as they preferred, but it was made clear that L1 reporting was entirely acceptable. The main argument for L1 reporting is, of course, that this imposes the least additional burden - and hence bias - on the processing of the task itself. In the event, most of my informants reported very largely in their L1, and only a few who showed a high level of confidence in their English ability (a confidence which was not always reflected in their cloze-task scores) chose to report in English; even these never avoided the use of their L1 entirely. The use of L1 reporting is not entirely straightforward, however: there exists, for instance, the possibility that my encouragement of L1 reporting may be partly responsible for the frequency with which my informants translated often quite long stretches of the task passage into their L1.

2.4 The interaction of researcher and informant

Arguably, the researcher should interact with informants as little as possible during the data-elicitation task - yet this may be unavoidable. However clearly the verbal report task has been explained or even modelled, an informant may still have questions or go astray. In my own data-gathering sessions, for example, I quite frequently had to re-emphasise (although these things appeared to have been clearly understood beforehand) that only one filler-word was allowed per cloze deletion, and that every deletion required a word. Reminders to verbalise may also be needed: perhaps the least interruptive technique is simply to point to a sign that reads 'Please keep talking'. Eye-contact (see Appendix) with informants should be minimised.

2.5 Post-task interviewing

As the think-aloud task tends to be quite tiring for informant and researcher alike, a short break may be required before any post-task interview. This interval also allows the researcher to very quickly review her notes, and to prepare questions about any aspects of the informant's processing which were unclear, or which otherwise merit following up.

Post-task interviews may be more or less structured according to the researcher's purposes, but at least some questions may be prepared in advance on the basis of processing behaviours observed in trial verbal report sessions. Some degree of structure is of course vital if cross-comparison among informants is intended, but retrospective interviews work best when the informant feels free to make spontaneous comments and does not merely respond to questions. In my own data-gathering, informants' spontaneous comments have generated as much insight as their responses to my prepared prompts.

An informant's audio recording can be used as necessary during the post-task interview, in the role of aide-memoire. In my own experience, however, it is better to let the informant retrospect about a given aspect of the task as far as possible without cueing from the recording; only where little or no information is forthcoming should the tape be used as a memory support. The researcher may of course wish to know more about a particular segment of the verbal report, in which case replaying of the appropriate extract may be unavoidable. It is unrealistic to expect informants to recall (rather than reconstruct) details of their processing without this support.

Replaying of the recording can also have a control function, in that inconsistencies may be found between an informant's retrospective remarks and the content of her on-task verbal report. To cite one example, an informant who claimed she had not translated parts of the stimulus passage into German was heard to do so quite extensively on the recording[5]. By and large - although minor discrepancies between on-task and post-task reports are not uncommon - informants' retrospections tend to be reliable if the interval between task and retrospective interview is short. Where an informant's assertions about her task processing conflict markedly with the data on her tape, it may be best simply to discard that individual's report completely. There is little to be gained, in my view, from embarrassing the informant with evidence of her own misapprehensions - especially if (the 'snowball' sampling procedure) one is relying on her to help find other volunteer subjects. Clearly, however, there are risks in simply taking informants' retrospections at face value, and confirmatory evidence from other data sources should always be sought.

3 An alternative to think-aloud procedure?

To sum up so far, concurrent think-aloud procedure provides arguably the richest and most direct reflection of cloze processing behaviours, but at very high cost in time and effort. Having used think-aloud in compiling a working taxonomy of cloze-processing strategies, I began to look for a less labour-intensive means of eliciting at least a subset of the same information from a larger group of informants. With this in mind, I revised an instrument which I had tentatively explored some years ago, and have labelled 'annotated cloze' (AC). Here the informant is required not to verbalise her processing, but to write it down in real time during the task. Cues within the text that aid recovery of deleted cloze items are underlined or circled, with arrows indicating the deletion(s) to which they were applied. Extratextual information aiding recovery is written alongside the appropriate deletion. Again, informants are encouraged to report in the L1 if they prefer, on the ground that this creates the least additional burden on processing.

3.1 Pros and cons of the AC task

The potential drawbacks of this procedure are obvious. For one thing, given that it takes much longer to write down an inference than to verbalise it, we might anticipate a greater loss of data than would be the case with oral reporting. Furthermore, AC provides no indication of how much time was spent on a given deletion - something which can be assessed fairly accurately from an oral protocol. AC, moreover, tells us very little about the relative difficulty informants experience with sub-tasks such as individual cloze deletions. Finally, AC may largely be limited to recording the textual data and extratextual knowledge which informants employ in completing the task.

But the picture is not entirely dismal, for AC procedure also has several advantages over think-aloud. One positive aspect is that, needing no input from the researcher, AC data can be gathered from a number of informants simultaneously, or (provided instructions to informants are clear) at any geographical remove. The collation and initial analysis of AC data is also much less onerous: requiring no transcription stage, an informant's AC manuscript can be analysed much faster than any think-aloud recording.

Another benefit is that, although certainly less comprehensive than think-aloud data, the data elicited in AC tasks tends to be more focused. By this I mean that informants seem to edit out - consciously or unconsciously - those cognitions which were less central to task completion, and thus present their data in a rather more condensed and ordered fashion than would be the case in an oral verbal report protocol. Given the constraints imposed by a written form, this is hardly surprising. Still another positive aspect of AC is that informants have a ready overview of the information they have already volunteered, and are thus better able to expand upon or to amend this than would be practical in an oral report. AC manuscripts often contain such revisions[6] and clarifications, in fact, as well as comments ('Eh?', 'Difficult!') that reveal something of the informant's affective response to the task.

Finally, the information lost in substituting an AC task for oral think-aloud may be partially recovered via the use of a post-task questionnaire. Successful questionnaire design is notoriously problematic and the desirability, mentioned above, of encouraging informants to volunteer insights into their task-processing adds to the complexity of the design task. Draft questionnaires may usefully be trialled through one-on-one observation of, and discussion with, the informants tasked with completing them. As my own questionnaires are in the informants' L1, I have found it helpful to ask informants themselves to revise the questions for clarity, as well as to propose new questions. By asking informants to think aloud as they work through the post-task questionnaire, in the presence of myself or of a tape recorder, I have been able to trap valuable insights which might otherwise have been lost.

3.2 The credibility of AC data

If we follow Ericsson and Simon, the data provided by AC protocols are clearly more refined (and hence less credible) than the rawer data contained in think-aloud reports. As I suggest above, however, the data reported during the processing of text-based tasks seem to exist along a cline of mediation, ranging from bits of words up to considered analyses. Indeed, my own reading of published studies which justify their methodologies by appeal to Ericsson and Simon's model suggests that not a few of these incorporate data which a strict application of Ericsson and Simon's approach to think-aloud would disallow. There seems, then, to be scope for the individual researcher's discretion in delimiting her data.

To sum up, although the risk of information loss through the use of AC is a serious one, comparison of its products with those of think-aloud protocols should provide some insight into what the former procedure fails to record. On that basis, I hope to be able to refine the AC task and its accompanying questionnaire, and to apply these to the gathering of data from a larger number of informants than would be possible with an oral report procedure.

Notes

[1] Ericsson and Simon's construct of 'short term memory' appears to this writer to be congruent with the more recent term 'working memory' (cf. Taft 1991).

[2] As observation of one's own real-time processing of texts and other data may suggest is the case.

[3] A certain amount of friction between partners was in fact evident when one failed to observe this convention.

[4] This was true of both cloze and intact reading passages.

[5] The situation was less clear cut regarding another informant who claimed to have translated quite extensively, but whose recording contained little evidence of this.

[6] A key instruction to informants is that revisions must be added above the (struck through) original data; nothing may be erased.

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APPENDIX: THE MECHANICS OF GATHERING VERBAL REPORT DATA

The practical aspects of collecting verbal report data are quite sparsely discussed in the literature, so it may be useful to describe here the procedures which I have arrived at by trial and error.

When tape recording verbal report data, it is important to use a good quality microphone (the microphone built into the average cassette recorder may not be sensitive enough) and to place this close enough to the informant to pick up even low-volume speech. To minimise masking through the noise of rustling paper etc., the stimulus task should wherever possible be presented on a single page. In a dyad reporting task it is especially important to obviate the need to turn a page, as this is very likely to disrupt one informant's processing.

The cassette recorder itself should be placed close to the researcher so that (a) the informant is not tempted to rewind or otherwise interrupt the recording and (b) the researcher can easily view the tape-counter window. Experience suggests that using a clock or watch to keep track of informants' progress may lead them to think that is a factor in their performance. As this risks modifying informants' behaviour, it is of course better avoided. It is in fact less awkward to keep track of informants' processing solely by means of the tape counter, as this makes it possible to note the precise location on the tape of interesting events, and to return to these during the post task interview. Accurate timings can of course be made at a later stage. Some cassette recorders have a very useful 'bookmark' or 'memo' function, which allows points of interest on the tape to be tagged simply by pressing a button. The tape can quickly and easily be rewound to these points, saving a surprising amount of time if the tape has to be referred to in post-task interviews.

Having the researcher busy herself with the tape-counter has the additional advantage of distancing her to some degree from the informant's task processing. My experience has been that solo informants in particular are prone to seek eye-contact with the researcher, and if this is established they may go on to seek confirmation of hypotheses or answers. Paired informants, of course, tend to seek this kind of support from each other.

A pitch control is another useful cassette recorder feature. This allows tape speed to be increased or slowed by (typically) up to 20%. This is most helpful when transcribing and/or coding the recorded verbal reports: the protocols of informants who verbalise clearly can often be processed at faster than normal playback speed, while the ability to slow the playback allows less clear verbal reports to be transcribed or analysed with minimum use of the rewind key. Note too that the task of transcribing extensive audio protocols is made markedly less unpleasant by the use of a tape player with a foot-controlled review function - especially if the duration of the segment reviewed can be set incrementally.

Finally, choose cassette tapes with enough capacity per side to capture an informant's on-task verbal report in full: changing tapes in mid session is an unwelcome intrusion for both parties.

MANAGING DISTANCES:
DISCOURSE STRATEGIES OF A TV TALK SHOW HOST

Fumi Morizumi (DAL)

Abstract

This study argues the importance of context interpretation prior to text interpretation and explains some characteristic discourse strategies exercised by a TV talk show host. The main goal is to investigate the inter-relationship between the given context, a particular Japanese TV talk show, and the text, and to see how this is reflected in the linguistic behaviour of the conversationalists who play their expected roles in the given frame. The study focuses on politeness strategies which are used to manipulate the social and psychological distances between interactants. This discussion is based on the idea that individuals behave and are expected to behave in certain ways in every given context (or frame) as they perceive and/or send contextualization cues.

1. Introduction

1.1 Basic concepts in the study

Discourse analysis is a field of study in which the studies of linguistics and communication meet. It is a study of 'language live' (Milroy 1989), which is recognised as 'the key to a better understanding of what language is and how it works' (Firth 1935: 32). It reveals how people perform verbally in personal interactions to achieve their goals; how they negotiate, or entertain, or try to understand each other, etc. Any interactant utilises what every strategy s/he has and gives a performance s/he judges to be most appropriate in a given circumstance.

This study analyses how a television talk show host performs to entertain his guest speakers and his audience. The main discussion is on why and how he manipulates the social and psychological distances in this particular situation. It is argued that all those strategies are used either according to the context or to define or re-define the environment. The ethnographic approach suggests that it is important for a discourse analyst to have enough background knowledge to interpret a text.

The following sections explain the notions of (a) text, context and frame, and (b) face, strategies of politeness, performance and role.

1.1.1 Text, context and frame

The analysis of 'content' - to use the most common term, which is also used, for example, in Malinowski (1923) and Halliday (1989) - or 'frame' - to use the concept initially presented by Bateson (1972) and developed by Goffman (1974) - is considered just as important as the analysis of the linguistic text. It is assumed that an appropriate interpretation of the context in which the interaction to be analysed takes place can predict appropriate and expected behaviour.

An analysis of a text is inseparable from the analysis of the context. Halliday defines text in the light of context as follows: text is 'a product of its environment' that is made of social exchange of meanings and is both a product and process of communication (1989: 10-11). The importance of understanding the context prior to the interpretation of a text is also evident in the works of the sociologist Goffman (e.g. 1959, 1967, 1974, 1981). Goffman, who uses the term 'frame', defines it as the basic elements or principles which constitute definitions of a certain situation and govern events and our subjective involvement in them (1974). Any communication participant has to ask the question, to make sense out of the situation: "What is it that's going on here?" (Goffman 1974: 8).

What, then, defines a frame? Gumperz (1982) refers to mechanisms such as intonation, speech rhythm, and choice among lexical or syntactic options as 'contextualization cues' and argues that those are what affect the expressive quality of a message. Contextualization cues provide the 'background assumptions about context, interactive goals and interpersonal relations to derive frames in terms of which they can interpret what is going on' (Gumperz 1982: 4).

My own research takes an ethnographic approach to these issues, though full details of research methodology are beyond the scope of this paper[1].

1.1.2 Face, strategies of politeness, performance, role

Analysis of the linguistic text in this study centres upon the use of strategies of politeness, which is governed by the rules of politeness and the principle of the face-work. 'Face' is 'the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact' (Goffman 1967: 5). An individual tries to maintain both his/her face and other interactants' faces, balancing the complementary needs of self and other. S/he tries to avoid face-threatening acts, which is the principle of the face-work (Goffman 1967).

Based on Goffman's theory, Brown and Levinson (1978, 1987) argue that language use derives from certain assumptions about face, which is apparent in the use of strategies of politeness which are divided into three categories: 'positive politeness (the expression of solidarity), negative politeness (the expression of restraint), and off-record politeness (the avoidance of unequivocal impositions)' and claim that the use of each strategy depends on social determinants (1987: 2). As a principle to govern the choice of strategies, Lakoff (1973) provides a system called 'Rules of Politeness': (1) Don't impose (Distance), (2) Give options (Distance), (3) Be friendly (Camaraderie). What individuals do is to 'juggle the need for, and danger of, being close' (Tannen 1984: 2). This aspect of human nature was observed by Durkheim: 'The human personality is a sacred thing: one dare not violate it nor infringe its bounds, while at the same time the greatest good is in communion with others' (1915: 229).

It is helpful to regard human communication as performance. Goffman defines performance as 'all the activity of a given participant on a given occasion which serves to influence in any way any of the other participants' (1959: 26). Those who contribute the other performances in relation to the original performer are referred to as the 'audience', 'observers', or 'co-participants' (1959: 26-27). These theatrical terms are particularly useful for analysing a public performance, but they can be applied to analyse any human behaviour. Goffman also introduces the notion of 'role' in interactions. The roles played by participants provide a guide for action, assigning 'obligations', that is 'establishing how others are morally bound to act in regard to him' (Goffman 1967: 48-49).

Individuals can also work as a 'team' to stage a single routine (Goffman 1959: 83-108). The team members share a kind of familiarity and intimacy, which is also reinforced by sharing secrets (ibid.). Possession and non-possession of a particular secret divides interactants into three types: 'those who perform; those who are performed to; and outsiders who neither perform the show nor observe it' (op.cit.: 144). It is the performers who 'are aware of the impression they foster and ordinarily also possess destructive information about the show' and it is the audience who 'know what they have been allowed to perceive, qualified by what they can glean unofficially by close observation' (ibid.). Outsiders are those who 'know neither the secrets of the performance nor the appearance of reality fostered by it' (ibid.).

Goffman continues that these three crucial roles can be described in relation to the regions to which the various role-players have access: 'performers appear in the front and back regions; the audience appears only in the front region; and the outsiders are excluded from both regions. Often, however, the correlation among functions, information available, and regions of access appears in an incomplete way, and this is when we find "discrepant roles"' (op.cit.: 114-115).

'Front region' and 'back region' constitute another pair of theatre-inspired notions. 'Front region', according to Goffman (1959), is the place where the performance is given in such a way as to maintain certain standards, while 'back region' or 'back stage' is where the impression fostered by the performance is knowingly contradicted as a matter of course. Front stage is where some accentuated activities are to be found, while back stage is the place where the suppressed facts appear (ibid.). In the front region, there are certain standards - which 'are sometimes referred to as a matter of politeness' - which the performer follows (op.cit.: 110). Both the performers and the audience expect such politeness to be shown.

1.2 The context and the text - why the TV talk show?

To analyse politeness strategies based on face-work and to discuss them in relation to the concept of frame, I chose a Japanese TV talk show, "Gokigenyou" ('How are you?'). There were considerable advantages in choosing a TV programme. First of all, there is no ethical problem in recording the conversation (Goffman 1981). What is televised is already common property. Second, the usual problems caused by observer-participation can be avoided. Third, as a regular watcher of the programme for the past six years, I considered myself qualified as an informed reader of the text. Fourth, it was possible for me to go to the filming studio and experience being part of the audience, which provided further backstage information about the programme and its participants. Fifth, among several talk shows, this one retained the most natural conversations due to the way the shooting was organized, which was televised unedited.

Opening scenes (approximately 2-3 minutes each) from five consecutive shows were transcribed and analysed. The opening scene is considered the tensest phase of the programme, since the initial stage of encounter influences the succeeding relationship development (Berger and Roloff 1982). It is presumed, therefore, that more care will be taken to make use of politeness strategies.

1.3 Reason for choosing the discourse strategies of a TV talk show host

The host of the TV show is a middle-aged male comedian, Kosakai. His use of discourse strategies was analysed as a showcase of discourse strategies oriented towards friendly interaction. The strategies in this special setting should not be different, in principle, from our everyday conversational strategies since what we mostly like to achieve in social interaction is to please and to be pleased.

In this paper, two of his politeness strategies are analysed and discussed: his use of keigo and joking. The former is an example of a negative politeness strategy and the latter is an example of a positive politeness strategy, these being extreme opposites among politeness strategies. As shown later, they create and balance tensions in the interaction.

Focusing on the discourse strategies of one person also provides insight into his role in the particular interaction.

1.4 Levels of communication

Levels and kinds of communication which take place in a TV talk show are quite complicated. Interpersonal communication, small group communication, large group communication and mass communication are simultaneously on-going. This often makes it difficult to define who the addresser is, and who the addressee is. For example, when the host is talking to a guest, he is also taking care of other guests' needs, mediating the on-stage interaction to the audience in the studio, being also aware that the whole interaction will be watched by thousands of people. These communication types are briefly classified in Figure 1.

The studio audience can also be the addresser of the show in the eyes of the TV audience, particularly when they actively show their participation by applause or laughter. The audience is then part of the performing team. As will be described later, the host takes great care not to offend their positive face by often treating them as his group members.

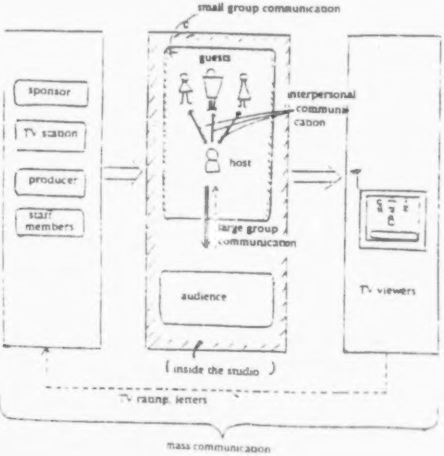
small group communication
guests
interpersonal communication
host
large group communication
audience
sponsor
TV station
producer
staff members
TV viewers
(inside the studio)
TV rating, letters
mass communication

Figure 1: Communication levels involved in the TV talk show

2. Research procedure

The main steps in my research were as follows:

1. Transcribe the recording, and translate it into English.
2. Participate in the studio shooting as a member of the audience.
3. Make a telephone inquiry to the broadcasting company.
4. Hold a telephone interview with Kanbe, the attendant of Kosakai.
5. Interview Kosakai.

6. Analyse the content.

7. Analyse the text.

Steps 2-5 were very helpful in gaining background knowledge and access to insider secrets. Kosakai, in the two interviews, revealed his introspections upon his own discourse strategies, a small part of which will be presented in this paper.

3. Context analysis

In this section non-linguistic constituents, or contextualization cues, of the context/frame are presented and analysed.

3.1 Brief description and analysis of the TV talk show programme, "Gokigenyou"

The primary target of "Gokigenyou" is housewives (and students), which is apparent from the fact that it is sponsored by a toiletry manufacturing company and is on the air at lunch time, on Monday-Friday, 13:00-13:26. The broadcasting style is as close as possible to that of a live show, for they do not reshoot or clip the tape to edit. This makes it possible for the TV audience to watch spontaneous interactions.

This show itself is a frame. Participants in the interaction here - the host, the guests, the audience, - all agree that it is an entertainment show for fun in which harmony and goodwill are valued and therefore act accordingly.

Five consecutive shows (each one about 25 minutes long, with three intervals) broadcast in 1994 were video-taped. All the five shows were recorded within one day in the previous week.

3.2 Shooting environment and the stage

In the studio there is a low stage whose set illustrates an informal living room. This creates an illusion of back stage region as if those people on the stage were having a cosy gathering in the host's house. The audience of about 120 people are seated about 15-20 metres away from the stage.

This informality of the setting is one of the contextualization cues that signal that the host and the guests are there to have a casual chat, which will include some show business insiders' stories. The stage is assigned discrepant regional roles: it is the front region of the performance, but it is also designed to function as a back region, a 'staff only' area. The studio audience and the TV audience who are the ultimate addressee end of the mass communication, are permitted to observe and overhear the otherwise inaccessible interactions and the secrets of the celebrities. As Kosakai himself put it in my interview, "Gokigenyou" is 'a back stage story-telling, after all'. (And we would agree that people love to know the back stage stories and secrets of celebrities and entertainers!)

The studio audience are not directed when to laugh, though they are instructed how to clap their hands to the opening music in the opening scene.

3.3 Roles of the speakers

In group communication, the notion of 'role' is more significant than in interpersonal communication. It is because a group assigns its members certain roles to play along so that the group can function as an organisation.

Kosakai, the host, is expected to perform as a host who entertains the guests and the audience, and also as a comedian, a professional entertainer. These factors constitute part of the context, set certain rules of politeness, and influence his linguistic as well as non-linguistic behaviour.

4. Text analysis

My earlier research on this topic[2] investigated the use of "keigo" (honorific system), joking, questioning, repetition, routines, and backstage story telling as the most marked features of the host's discourse strategies. In this paper I would like to discuss the use of keigo and joking as selected examples of politeness strategies.

4.1 Keigo

4.1.1 Function of keigo

Keigo is the honorific system of the Japanese language. There have been many books and articles about variants and appropriate use of keigo[3]. In this paper the function of keigo as a means to express social and psychological relationships between conversational participants (Kikuchi 1994) is investigated as one of the (possibly) universal discourse strategies of politeness.

Keigo is seen as a negative politeness discourse strategy to express restraint. The degree of politeness signals what the speaker perceived from the context/frame as appropriate and/or what kind of relationship s/he desires to create with the addressee. Keigo usage is influenced by social psychological factors such as setting (place, participants) and topics, intimacy, hierarchical relationship, in-group and out-group identity. Speakers can also use types of keigo, or the absence of keigo, to express their attitude toward the addressee, which may be different from the socially appropriate use. Kikuchi (1994) proves this point by presenting a personal experience of a scenario writer who was criticised by her friend for using keigo when she thanked him for his help. She failed to show the intimacy which her friend had expected, when she used keigo, for this signals social and psychological distance.

4.1.2 Examples of keigo use from the transcript[4]

The speech style of Kosakai, the host, contains very polite expressions, which is rather rare for a comedian. When subjects in a survey were shown a part of the original transcription in Japanese, some identified his speech as that of a woman because of the politeness. Others could not tell if it was the speech of a woman or a man[5]. It appears that women tend to use more polite forms of language than do men (e.g. Labov 1966), or at least are expected to do so (e.g. Lakoff 1975, Brown 1993, Romaine 1994). This phenomenon is found in many cultures, including Japanese culture (e.g. Crystal 1987). Extensive use of keigo, which gives a polite and soft-spoken impression, is generally understood as a characteristic of women's speech (e.g. Ide 1982, 1990, Shibamoto 1985, Mizutani and Mizutani 1987). The result of the survey indicates, therefore, an extensive use of negative politeness strategy by Kosakai.

(The following are examples of Kosakai's extensive use of keigo. The line numbers indicated correspond to the line numbers in the transcription of the original material. The addressee is indicated after each utterance in parentheses. See Appendix for transcription conventions. The Japanese transcription is followed by an English translation. Italicised *hon* indicates the use of an honorific form.)

(a) prefixes such as *o-* and *go-* are most commonly used with nouns and verbs to add politeness, showing respect to the addressee.

2-3 -- *o*-kyakusama no hou kara *go*-shoukai *itashimashou* = (to A)
hon+guests *hon*+introduce *hon*+do+shall
(please let me introduce the guests first)
3-94 *O*-azukari shite okimasu. (to G3)
hon+keep
(please allow me to keep it)

(b) *Gozaimasu*, a copula, which is a more polite form than *desu*, a neutrally polite form of *da*, is frequently used.

1-28 = to iu imi ga *gozaimashi*-te = (unidentified)
the meaning *hon*+be
(there is a meaning as such)
4-8 Futsukame de *gozaimasu* ga -- (to G5)
second day *hon*+be
(this is the second day, and)

(c) Verbs in humble form mitigating the speaker's status show respect to the addressee.

3-6 -- *go*-shoukai *itashimasu* (to A)
hon+do
(I would like to introduce .....)
1-20 = to itte *orimashi*ta ga benkyou-busoku de *gozaimashi*ta= (to A)
-21 *hon*+be+past ignorance
(I was saying this, but it was my ignorance)
3-122 -- *ukagai*tai to omoimasu (to G5)
hon+ask/listen to
(I would like to ask/listen to)

(d) Verbs inflections in honorifics that refer to the guests' action show the host's gratitude.

5-10 -- tanoshiku sugoshite-*itadaki*tai to omoimasu = (to A)
have a good time-*hon*+have you do hope
(I would be grateful if you could have a good time with me)
5-115 -- kaite-kite-*idadai*te. (to G7)
have written-*hon*+have you do
(I am honoured that you have written that for me)

(e) Respectful forms of verbs are used to refer to the guest's action.

3-121 -- to *osshatta*-n de (to G5)
hon+said
(because you said)

The role he plays, that of a talk show host, dictates that he should use keigo as a negative politeness strategy in the front region. Brown and Levinson explain that use of honorifics functions to give deference, respecting the 'negative face' of the addressee, that is, 'his want to have freedom of action unhindered and his attention unimpeded' (1987: 129). By using keigo, the host is able to create and/or keep a desirable distance between the addressee and himself.

However, it is not always appropriate to keep using keigo, particularly when the participants all wish to be on friendly terms. The use of keigo may sound stand-offish and can mark "out-group-ness", which can violate the positive face of the addressee, as shown earlier, who expects a more friendly

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and familiar social and psychological treatment. This raises the issue of deciding the appropriate degree of politeness expected.

The context analysis showed that this show sets and informal tone, which makes a very high degree of negative politeness undesirable. On the other hand, the opening scene provides a sub-context/frame which requires a high degree of negative politeness by its being the initial stage of the encounter.

Kosakai manages to show positive politeness non-verbally by using contextualization cues of kinetics (facial expressions, gaze, postures) or proxemics (use of interpersonal space) while he maintains a very polite manner of speech. Paralinguistic features such as high-pitch and faster rate of speech and turn taking, which are features of high-involvement style (Tannen 1984: 30-31), are other characteristics of his speech that show intimacy.

Linguistic behaviour to get close to each other is also called for to balance desirable distance. Joking is introduced below as one of such positive politeness strategies.

4.2 Joking

Polite forms of speech such as keigo and joking might be considered opposite poles. Joking is a sign of in-group membership and needs a context that is appropriate for joking. Without the foundation of an established relationship, it can be highly face-threatening (Norrick 1993).

As a professional entertainer/comedian, Kosakai is expected to perform in such a way as to amuse people and make them laugh. The show has to be funny. The guests and the audience expect to be entertained as well as to be treated respectfully. This prevents his jokes from becoming face-threatening or offensive. Moreover, it is possible to signal 'This is a joke' by facial expressions, tone and pitch of voice, and/or eye contact, all of which Kosakai recognised that he did, in the interview.

In the following section a few examples of the joking acts are presented and discussed. (Japanese transcription is omitted here).

4.2.1 Joking and wordplay

(lines 3-63 -- 3-66)
H reads aloud a question G4 had written down.)
H: "What would you do if you grew one centimetre taller every day?"
G3: Oh, that's quite a thing, isn't it =
H: Yeah (to G3), three metres and sixty five centimetres a year (to A)
(A laugh as H tries to measure that height)
    On holi-, on holidays, maybe it doesn't work. (to A)
(G3, G4 and A laugh as H goes on reading other questions)
H: "You go into the bathroom, [and
G3: [Well done! (to H, clapping)
(H smiles and nods to G3, and continues reading the question)

The host elicited the first laughter by a non-verbal action, but his utterance that followed the action was more successful. He brought up the notion of holidays and said this strange phenomenon of growing a centimetre a day would not work on holidays, just as we human beings do not work. This is a word play serving as a joke, acclaimed by Guest 3, 'Well done!'

Joking here is more than just making people laugh. It is an act to build solidarity. Kosakai picked up what was originally brought up by Guest 2, making a joke about it, providing an aspect of co-operative activity. Moreover, his joke induced another co-operative act from Guest 3, who enhanced Kosakai's positive face by acknowledging the wit. Here joking is part of team work to support the group identity of the interactionists.

4.2.2 Joking to get a distant figure closer

(lines 5-46 -- 5-48)
(After G5's good physique was talked about)
H: Being aware of that, you might, like, navy blue, no, black underwear = (to G5)
(A laugh)
G5: =Oh=
H: = aren't you wearing something like that.

Guest 5 is a male Olympic gold medalist skier. Upon his entrance, the studio audience cheered more than usual, and the other guests also showed excitement. Guest 5, who does not belong to the show business world, is a star in a different world to be regarded with awe. It may be worth mentioning that Kosakai addressed Guest 5 and Guest 1 (both sport players) in surname+*san* form, a more polite address form than surname+*kun* form which he used to address Guest 3 and Guest 7, both of whom are entertainers younger than himself[8]. These are contextualization cues that signal that Guest 5 is an 'outsider', while Guests 3 and 7 are treated as Kosakai's group members.

Nevertheless, the frame defines the situation to be an informal and intimate gathering. The host is trying to create a more familiar atmosphere by treating Guest 5 without distinction, i.e. as a group member, for which the act of joking was used. Joking is a sign of already established membership, but it can be used to show, when used between not-so-intimate interactionists, the addresser's intention to treat the addressee as a new group member. Just as the environment determines the language, so language, in turn, creates the environment (Halliday and Hasan 1989).

Here the host's mentioning black underwear provoked laughter because people usually consider black underwear very sexy and consider the wearer as self-conscious of his/her sexuality. Guest 5, a young clean-shaven skier, does not look like a person to exhibit his sexual appeal intentionally. This mismatch allowed the participants in the interaction to laugh about it at ease. Kosakai not only lessened the distance between Guest 5 and himself but the distance between Guest 5 and the other guests and the audience.

4.2.3 Joking and in-group secret

(lines 5-3 -- 5-4)
H: Now, everybody, Golden Week started today, right?
(A laugh after a pause)

When this show was broadcast on Day 5, it really was the first day of Golden Week, a succession of Japanese national holidays from the end of April to the beginning of May. Why, then, did the audience perceive it as a joke?

It was on the Wednesday of the previous week that the show was recorded. It was not Golden Week yet. As mentioned earlier, "Gokigenyou" is made to appear like a live show and presented as such. Kosakai told a deliberate 'lie' which he intended the studio audience to notice as his trick. It took a moment for the audience to perceive the situation, but when they understood, they welcomed it as a joke.

Some people know that "Gokigenyou" is no longer a live show, though others do not. Yet it is supposed to be a back region knowledge, a 'secret' in the making of the show as opposed to the way it is presented and witnessed by its TV viewers, i.e. the front stage of Gokigenyou as a "live" TV programme. The host allowed the studio audience to share the 'secret', which made them feel as if they were part of his team members in the interaction. The audience are now working as accomplices, which amuses them.

5. Conclusion

Discourse strategies, on the whole, are regarded as tools for successful management of appropriate distances. The appropriate distance in a particular circumstance is deduced from the context, or the frame. The context is defined and/or created by a variety of verbal and non-verbal contextualization cues. Knowledge of the context is essential for the researcher to interpret a text as well as for every individual to participate in a conversation in an expected manner.

Two basic discourse strategies, keigo and joking, have been discussed. Both are used to manipulate the social and psychological distances between the participants: keigo to create or preserve distance between participants so as not to threaten the negative face of the individuals, and joking to lessen the distance and satisfy the positive face of the individuals.

The text presented some difficulties due to its nature as a TV talk show. The context requires the text to be highly "performed". The roles of the participants (guests, studio audience) and whether they are in-group members or out-group members are often ambiguous.

Though not mentioned in this research, cultural differences, as well as universal wants, with regard to expected politeness strategies, may be present.

Notes

[1] Some sociologists propose that detailed illustration of context including the personal history of the people concerned are essential in sociological studies (e.g. Mills 1959, Denzin 1989). Geertz, an ethnographer, used the term 'thick description' to refer to a detailed description that contains real voices of the people (1973). They claim that those descriptions are required so that the readers of the text written by the researcher can 'experience' what happened in the event concerned and can reach the most appropriate interpretation.

[2] Unpublished M.A. thesis 1995.

[3] See, for example, Tsujimura 1967, Okachi 1974, Shibata 1979, Wenger 1982 and Kikuchi 1994.

[4] Transcription conventions are listed in Appendix.

[5] An informal survey was conducted among twelve students at International Christian University, Tokyo. A few pages from the transcript were presented but excluding the first person pronouns and personal names which could indicate the sex of the participants. Five people identified Kosakai as a woman, two identified him as a man, and five were unable to identify the sex. Those who identified Kosakai's speech as a woman's gave his extensive use of very polite sentence ending forms such as '--gozaimasu' and '--itadakimashita' as the reason for the identification. Five students who answered that it was not identifiable said that such very polite language owes much to the role of the speaker, rather than the sex. The two who identified Kosakai as a male speaker knew who the speaker was.

[6] One classic example in which the use of address forms is discussed is Brown and Gilman (1960). It is demonstrated and claimed that the choice of pronoun derives from 'two dimensions fundamental to the analysis of all social life - the dimensions of power and solidarity'.

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APPENDIX

Transcription Conventions

Speakers

Speaker identity/turn start	:
Speech overlap	[[
Continuous utterances	=

(when there is no interval adjacent utterances or there is a continuous flow of the same speech carried over to another line)

Transcription continuity

Final	.
Continuing	,
Appeal	?

Accent

Booster	!
Lengthening	..../----

The above conventions are adapted from Schiffrin (1994).

Other symbols for communication participants are:

H	Host
G1	Guest 1
G2	Guest 2
G3	Guest 3
^	
^	
^	
A	Audience in the studio

First digit in a line number indicates the day of the broadcast:

e.g. 1-28 .... Day 1 (Monday)
2-3 .... Day 2 (Tuesday)
3-94 .... Day 3 (Wednesday)
4-8 .... Day 4 (Thursday)
5-10 .... Day 5 (Friday)

LEXICAL PROCESSING IN UNEVEN BILINGUALS: AN EXPLORATION OF SPANISH-ENGLISH ACTIVATION OF FORM AND MEANING

Carmen Santos Maldonado (DAL)

Abstract

This article looks at the organisation of the bilingual mental lexicon. The first half briefly reviews relevant literature in bilingual research in relation to whether semantic information is language-specific or language-independent. Three major hypotheses are examined: the Shared Semantic Store, the Separate Semantic Store and the Shared-&-Separate Semantic Store. Other factors having an influence on the organisation of the bilingual lexicon are the degree of topological difference between two languages, the degree of dominance of one language over another and the demands imposed by the experimental tasks. In the second part, I report on a lexical decision experiment with repetition priming carried out with Spanish-English bilinguals. Four independent variables were looked at: language (Spanish and English), L2 proficiency (low intermediate and advanced), degree of cognates (same and different) and repetition (repetition within languages, repetition between languages, and no repetition). Significant differences in reaction times were observed for all variables except cognates. Results are discussed in the context of recent studies. A line of research is proposed to examine activation of bilingual lexical items as a function of form and meaning combined.

1. Introduction

The importance of lexical research derives from the simple fact that understanding 'words' is the key to human communication. In child language learning, the acquisition of words precedes the acquisition of grammar. Moreover, of the three pillars on which every language system rests – grammar, vocabulary and phonology– vocabulary is the only one that continues to develop throughout a life span, even when grammar and phonology have reached a state of 'maturity'. This is true not only of first language competence but also tends to be the case in second language learning.

For the psycholinguist, a general but crucial theoretical issue in bilingualism is whether the knowledge represented in the lexicon of both languages is stored in a single semantic memory system or in two separate systems. In particular, we need to explore such issues as: to what extent lexical activation processes in the second language (L2) are similar to or shared by the lexical processes of the first language (L1); and whether it is possible for the bilingual mind to operate in a completely monolingual mode once it has become bilingual. A more specific question is how the bilingual learner structures and integrates the new lexical items of the second language into the lexical knowledge already stored in his or her mind. Ideal comprehensive models of lexical learning and lexical processing should, therefore, be able to incorporate a description of bilingual processes, especially if we accept the argument that a bilingual mind is different from the simple addition of two monolingual minds (Meara 1983).

Let us start by clarifying some points of terminology. Firstly, for most people a 'bilingual' speaker is someone who is able to speak two languages equally fluently, preferably if both were acquired during the early years of life. Clearly, not many people can claim that privilege in absolute terms. Even if both languages were acquired before adolescence, innumerable social and personal variables make a true balance highly unlikely (Harris and McGhee Nelson 1992). However, in the context of second language acquisition (SLA) research, 'bilingual' usually includes someone who has first learned their mother tongue to full command and has then learned a second language to a greater or a lesser degree of competence. This is how the term bilingual will be used in this article. Secondly, I will employ the term 'even' bilingual to refer to a speaker who is equally competent in both languages; I will use the term 'uneven'[1] bilingual to refer to the second or foreign language learner with a clearly dominant first language. In this connection, the term 'second language', or L2, will be used to refer to the language that came second in the speaker's life, in other words, in contrast with 'first' rather than with 'foreign' language.

As stated above, the first half of this article briefly reviews relevant literature in bilingual research. In the second half I report on a lexical decision experiment with repetition priming carried out with Spanish-English bilinguals, I then analyse the results and propose the line of research which I intend to pursue in the near future.

2. Models for the organisation of the bilingual mental lexicon

Studies in bilingual lexical research by no means present a unified picture. Over the years researchers have put forward various 'theories', 'paradigms', 'models' and 'hypotheses', which quite often are not comparable. Two possible reasons for this lack of comparability are, first, that assumptions are not always clearly stated and, second, that terminology is often not clearly defined. For example, it is difficult to know if authors mean exactly the same when they talk about 'unified language processing system' (Altenberg and Smith Cairns 1983), 'integrated semantic memory system' (Schwanenflugel and Rey 1986), 'single language-independent store' (De Groot and Nas 1991) or 'integrated network' (Kirsner, Smith, Lockhart, King and Jain 1984). In addition, many experiments are not easily comparable either. This state of affairs makes any meaningful evaluation of the research literature problematic.

In her historical analysis of cognitive bilingual research, Keatley (1992) suggests that studies can be grouped into three blocks. Each block asks one of the following questions:

- Are the meanings of the lexical items in a bilingual's two languages represented in a shared memory system or in a separate one?
- Does the 'inactive' language influence processing in the 'active' language?
- Assuming the semantic memory system is shared, how do words in the bilingual's lexicons access conceptual representation?

The largest group of studies revolves around the question of the shared or separate semantic store. In this connection, Snodgrass and Tsivkin (1995) suggest that views cluster around three basic theoretical positions. For the purposes of this article the positions will be referred to as follows:

1. The Shared Semantic Store Hypothesis.
2. The Separate Semantic Store Hypothesis.
3. The Shared-&-Separate Semantic Store Hypothesis.

2.1 The Shared Semantic Store Hypothesis

The view that the bilingual lexicon is a single store of semantic information shared by both languages (McLaughlin 1985) is sometimes referred to in the literature as the Interdependency Hypothesis. It assumes that shared semantic information feeds both languages, and that only linguistic labels, or 'tags', are language-specific.

Early support for the notion of a single conceptual memory system came from experiments on transfer and interference of learning across languages (Young and Webber 1967; Preston and Lambert 1969). More recently, work done in the field of semantic facilitation is often quoted in relation to the Shared-Store Hypothesis. It is accepted that words are recognised more quickly if they appear in the context of other semantically related words. For example, the word *brother* will be processed in a shorter time if it occurs in the context of *sister* or *family*. Meyer and Ruddy (1974, cited by Kirsner, Smith, Lockhart, King and Jain 1984) found that, for bilingual speakers, cross-linguistic semantic facilitation was as important as semantic facilitation in a monolingual task. Similarly, Schwanenflugel and Rey (1986) arrived at the same conclusions when they tested cross-language priming effects on lexical decisions in Spanish-English bilinguals. They observed that priming within the same language was not greater than priming between languages.

Nas (1983) also provides some evidence for the shared semantic store hypothesis when he asked Dutch-English bilinguals to make lexical decisions on English-like non-words, which were actually real words in Dutch – i.e. pseudo non-words. He found that reaction times were slower for the pseudo non-words than for ordinary English non-words. On the basis of this, Nas concluded that the semantic store was common for both languages. Altenberg and Cairns (1983), however, on achieving similar results, were much more cautious and did not feel that conclusions could be drawn about whether there are one or two processing systems. They simply proposed that bilinguals have knowledge of two sets of phonotactic constraints, and that both sets are simultaneously available during lexical processing.

Despite the evidence that has been gathered over the years, there are some problems associated with the Shared Semantic Store Hypothesis, at least with its strong version. De Groot and Nas (1991) have found some restrictions necessary for bilingual priming to occur: the translation equivalents have to be 'cognates', i.e. similar in form and meaning, not only similar in meaning, and they have to be presented almost immediately one after the other.

2.2 The Separate Semantic Store Hypothesis

The view that words and their meanings in the bilingual's two languages are stored separately in two independent memory systems is sometimes referred to as the Independency Hypothesis. Researchers like McCormack (1977), Kolers and González (1980), Paivio and Desrochers (1980), Paivio and Lambert (1981), Scarborough, Gerard and Cortese (1984) and Paivio, Clark and Lambert (1988) have followed this line of work. Paivio and his collaborators developed a Dual-Coding Model for images and words, claiming that the actual code – i.e. language – determines the organisation of mental representations into two separate memory systems.

Kolers and González (1980) researched into word-associations in two languages, and concluded that, very often, the associations of a particular word differ from the associations conjured up by the translation of that word into another language[2]. This could be interpreted as there being, at least to a certain extent, two separate sets of associative relations. However, they hedge their conclusions by suggesting that the nature of the relation between both lexicons (i.e. whether they are independent or interdependent) can be largely influenced by the nature of the encoding or retrieving tasks that bilinguals are asked to perform. Thus, the shared-separate dichotomy could be an empty question. This methodological point would later be taken up by Durgunoglu and Roediger (1987), who concluded that the dichotomy is a completely meaningless issue. Other researchers, however, think the debate is a perfectly legitimate one. Scarbororugh and his collaborators (1984), for example, powerfully maintain that bilingual speakers "are able to process the words of a language in a language-specific manner, without any influence of their knowledge of the surface (e.g., spelling) or conceptual representations of words in the other language" (Scarbororugh *et al.* 1984: 84). They found that the practice of words from one language helped improve times needed for the recognition of those words, but it did not do anything to speed up reaction times in the recognition of the translations of those words. They also found that when bilinguals were instructed to respond only to true words in a particular language, they reacted to words of the non-target language as if they were non-words. A few years later, Gerard and Scarborough (1989) repeated the basic experiment and found the same results.

The Separate Semantic Store view can presumably account for the fact that homographs, like *red* in Spanish (meaning 'net') and *red* in English (meaning the 'colour red'), are semantically processed only within the relevant language, while the non-target meaning seems to remain untapped. This approach could also explain the fact that bilinguals can switch between languages, as required by the context, and are still able to limit themselves to the use of one language only, without having to constantly suppress the interference from non-target vocabulary. However, the view of two, totally independent lexicons is not without problems. For example, how can it account for successful fast code-switching of speakers in bilingual settings? And what about the problems of interference that many non-fluent speakers experience when functioning in the second language?

In her review of bilingual memory research, Keatley (1992) concludes that more recent views either reject the dichotomy as meaningless and irrelevant, or they propose a picture of bilingual lexical processing with structures connected at different levels. Some of these structures are shared and some are separate, which leads us to the analysis of the third position.

2.3 The Shared-&-Separate Semantic Store Hypothesis

The Shared-&-Separate Semantic Store Hypothesis redefines 'lexicon' as a somewhat narrower construct: lexicon is interpreted as containing only morphological and phonological specifications for words, and, maybe, specifications for the syntactical distribution of words. This view advocates the existence of one such lexicon for each language. The two lexicons would be linked to each other via a common semantic store which houses the conceptual representation of all lexical items (see figure 1).

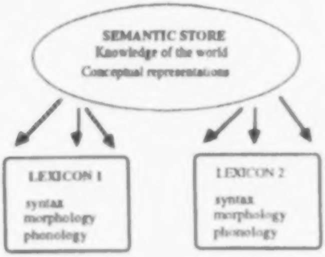

Figure 1. The Shared-&-Separate Semantic Store Hypothesis: the two separate lexicons are connected via a common semantic store.

The attraction of this mixed model lies in the fact that it softens the sharp dividing lines postulated by the other two positions already discussed, in that it combines the best arguments of both: the cost-effectiveness of a fully integrated semantic memory store, and the autonomy of two separate syntactic, morphological and phonological systems. This hybrid model encompasses the most recent developments in the literature of bilingualism (De Bot, Cox, Ralston, Schaufeli and Weltens 1995; De Bot 1992; De Groot 1993, 1992; Green 1993; Kroll and Sholl 1992; Kroll and Stewart 1994) and is also compatible with more general frameworks put forward to account for monolingual lexical processing. Particularly relevant are Levelt's Speaking Model (Levelt 1989, 1992) and the Spreading

Activation Theory of semantic memory (Collins and Loftus 1975; Dell 1986, 1988). The theoretical and experimental implications of these models provide the framework for the lexical decision experiment reported later in this article.

2.3.1 Levelt's Speaking Model

Levelt's model of linguistic production almost exclusively accounts for monolingual speech. According to Levelt (1989, 1992), from the point of view of speech production, the specifications contained in every lexical entry can be grouped into two parts, lemma and lexeme. The lemma encompasses the meaning and syntax of the entry, whereas the lexeme agglutinates the form properties, morphology and phonology. Grammatical encoding is geared by lemma retrieval: once the meaning of the lemma has satisfied the conditions stipulated by the propositional message, a set of syntactic specifications (syntactic category, selection and categorisation rules, thematic role assignments, etc.) has to be met. At this stage lexical items are still unspecified for morpho-phonological form. For a phonetic plan to be executed by the articulatory system we have to move to the second phase of lexical access, phonological encoding. Lexical items, then, are activated in two successive stages: first, lemma activation (or semantic activation), in the form of semantic representations, pragmatic and syntactic information; and second, lexeme activation (or form activation), by way of morpho-phonological rules. We will come back to the notion of activation in the next section.

It is tricky to pin down what proportion of a concept is actually linguistic/semantic knowledge and what proportion is part of our wider knowledge of the world. It is generally accepted that the world-knowledge store is language-independent and therefore one store would be enough for both languages. Levelt assumes that the conceptualizer, on the other hand, is language-specific and he argues his case by discussing the example of spatial reference in Spanish and English: English uses only one spatial distinction (*here/there*), while Spanish uses two distinctions (*aqui/ahi/alli*). In Levelt's view, these distinctions should already be present in the preverbal messages. De Bot (1992), however, suggests that this conception would be anti-economical and proposes that the first of the two operations taking place in the conceptualizer (macroplanning) be language-independent, and the second operation (microplanning) be language-specific. What is indeed clear is the fact that the internal structure of lexical items is crucial for the understanding of lexical retrieval processes.

The bilingual version of Levelt's model must account for the fact that, with no apparent problems, many bilinguals can use both languages separately as well as in 'code-switching' mode. It should also account for the fact that unwanted cross-linguistic influence is relatively common in bilingual speech.

2.3.2 Spreading Activation Theory

Semantic Activation models (Collins and Loftus 1975; Dell 1986 1988; Dell and O'Seaghdha 1992) are based on assumptions of spreading activation, which 'postulates a network of linguistic rules and units in which decisions of what unit or rule to choose are based on the activation levels of the nodes representing those rules or units' (Dell 1986: 283). In a spreading activation model, lexical processing would take place in a way very similar to the synaptic connections in nervous transmission (see figure 2). There are three processes involved: spreading, summation and decay.

- Spreading happens when a node is activated and sends out some activation to other nodes connected to it.

- Summation operates when the activation reaching a particular node is added to whatever level of activation was previously present in the node.

- Decay is the passive decrease of activation after a period of no activation reaching the node.

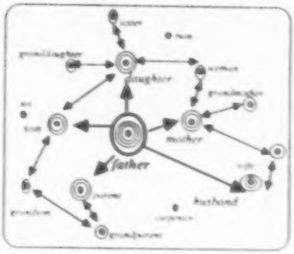

*Figure 2: Illustration of how Semantic Activation models work: when a linguistic node is activated (e.g. '**father**'), activation spreads out to other nodes connected to it. The level of activation becomes weaker as it reaches nodes further removed from the central one (e.g. 'daughter', 'sister').*

Spreading activation closely relates to the notion of the Subset Principle (Paradis 1987, cited by De Bot 1992). The appeal of this hypothesis lies in the suggestion that, if connections are made often enough, subsets can be formed, not only among elements (nodes) of a single language, but also among elements of different languages. A further characteristic of subsets is that they can comprise not only words as such but also groups of semantic or syntactic features. An example of a within-language subset is any semantic field. A subset across languages would be formed by lexical entries frequently used by bilinguals who code-switch very often. Another fundamental feature of this model is that all the connections are two-way and activation can circulate in both directions between two activated nodes. This theoretical aspect, which is of crucial relevance for the organisation of the bilingual lexicon, poses an important problem for Semantic Activation models, in general, and for the Subset Principle, in particular: if information can flow backwards and forwards between lexical entries for both languages, why is it that translation from L1 into L2 is generally much more difficult and slow than translation from L2 into L1? The Concept Mediation Hypothesis, in the next section, addresses this issue.

2.3.3 The Concept Mediation Hypothesis

A variation of the Shared-&-Separate Semantic Store Hypothesis, the 'Three-Code' Hierarchical Model, was put forward by Potter, So, Von Eckardt and Felman (1984). It suggests that there are different levels of lexical processing. Whether the lexicons in a bilingual's two languages operate independently or in a shared fashion depends on how deep the level of processing is: there is a first level, the level of the word forms, which is language-specific (separate); and there is a conceptual memory level, which is language-general (shared). Furthermore, the store of conceptual representations is amodal (non-linguistic) and therefore other forms of information, like pictorial information, can also have access to it.

Potter *et al.* (1984) tested their model by looking at retrieval of translation equivalents. They proposed two types of hypotheses about how translation equivalents could be searched for in the other language:

- The Word Association Hypothesis: A word in one language makes a direct contact to its translation equivalent in the other language.
- The Concept Mediation Hypothesis: Lexical items contact translation equivalents in the other language via conceptual representations in the memory. It is assumed that translation by word association is faster than by concept mediation, because the route is more direct.

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The Three-Code Hierarchical Model has been progressively revised and extended to address the question of asymmetry in translation. Kroll and Sholl (1992), Kroll (1993) and Kroll and Stewart (1994) have proposed the Asymmetry Model of bilingual representation. This model includes both lexical and conceptual connections between the L1 and the L2 and different connection strengths depending on the direction of the connection (see figure 3).

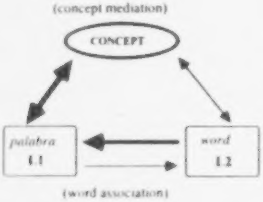

Figure 3. Illustration of the Asymmetry Model. Translation from L1 to L2 is more difficult because lexical connections in the L2 direction are weaker.

The authors hypothesise that translations from L2 to L1 are less difficult and faster than translations from L1 to L2, because word-to-word links between L2 and L1 are stronger than word-to-word links between L1 and L2. Translation from L1 to L2, on the other hand, is likely to be conceptually mediated, and this mediation is impaired by the fact that conceptual links for L2 are not as strong as conceptual links for L1. As the speaker becomes more fluent, connections between L2 and conceptual representations become stronger, but the lexical connections are still active. This would explain why translation into L1 usually remains easier. The Asymmetry Model is, however, more descriptive than explanatory: it tells what happens in translation, but not why that happens. For example, lexical connections in the L1—>L2 direction are weaker. But, if information flows both ways, according to theories of Spreading Activation, why then should information in one particular direction be impaired?

3. Factors affecting the organisation of the bilingual lexicon

We have seen so far that looking at lexical knowledge as a monolithic construct, and asking whether this knowledge is shared in a common system or is stored in two separate systems, is probably too simplistic. There are several factors that may play an important role in how the bilingual lexicon is organised, mainly the degree of topological difference between the two languages, the degree of dominance of one language over another and the demands imposed by the experimental tasks.

3.1 Linguistic distance between the two languages

To establish a relationship between the linguistic distance separating two languages and the likelihood of a joint or independent semantic store, Paradis (1985) formulated a hypothesis of a language pair-distance continuum. The continuum would range from the great dissimilarity between two unrelated languages (e.g. Spanish *vs.* Basque), through only relative similarity in somewhat related languages (e.g. Spanish *vs.* English, Spanish *vs.* Italian), to the great similarity between two different registers of the same language (e.g. colloquial Spanish vs. formal Spanish). What this implies is that a bilingual speaker of two closely related languages is more likely to enjoy shared semantic information for both languages, while the bilingual speaker of two completely unrelated languages probably makes greater use of language-specific lexical knowledge.

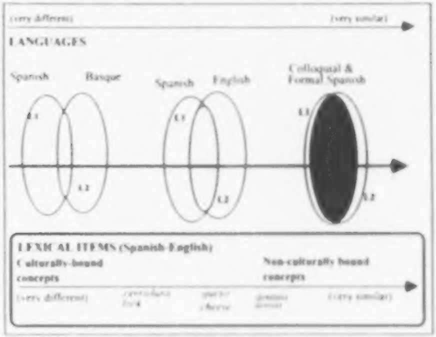
(very different)
(very similar)
LANGUAGES
Spanish
Basque
Spanish
English
Colloquial & Formal Spanish
L1
L2
L1
L2
L1
L2
LEXICAL ITEMS (Spanish-English)
Culturally-bound concepts
Non-culturally bound concepts
(very different)
cerradura lock
queso cheese
dentista dentist
(very similar)

Figure 4. Illustration of Paradis (1985) hypothesis for the language pair-distance continuum. The hypothesis could be extended to cross-language pairs of lexical items (e.g. Spanish-English)

Now, I would like to suggest that the hypothesis of linguistic distance could be applied not only to languages as whole systems, but also to individual lexical items. Take Spanish and English as an instance (see figure 4). For translation equivalents, not formally related in any obvious way, like *cerradura* and *lock*, the bilingual speaker would rely more on language-specific knowledge. For two more obviously related items, like *queso* and *cheese* the overlapping semantic knowledge would be greater. Finally, for two true cognates (i.e. lexical items with same meaning and very similar phonology) like *dentista* and *dentist*, the Spanish-English speaker would largely make use of the same procedural and lexical knowledge. An extreme example of lexical distance comes with culturally-bound concepts. For example, English words related to cricket and Spanish words related to bullfighting are extraordinarily difficult to translate, because the concepts as such do not exist in the target language. In a more domestic domain, the word *kettle* has no satisfactory translation into Spanish, quite simply because there are no 'kettles' in Spain. *Kettle* is sometimes translated as 'hervidora de agua', which is only half adequate, as it is a translated paraphrase of the function of the object.

The notion of lexical distance, or degree of 'cognates', closely relates to one of the independent variables in the lexical decision experiment reported later in this article (see section 4.1. on hypotheses and variables). In this connection, we drew up a list of very similar pairs of words in both languages, or 'sames', (e.g. *mapa* and *map*) and a list of very dissimilar pairs of words, or 'differents', (e.g. *pantalla* and *screen*). Our aim was to explore if, across languages, reaction times for 'same' words were shorter than reaction times for 'different' words. If this is the case, it could then be hypothesised that cognates share some procedural and lexical knowledge – hence the priming effect, and that translation equivalents are processed in a more language-specific way – hence less or no priming effect.

3.2. Level of proficiency in the second language

One theoretical problem which Levelt's Speaking Model (1989, 1992) presents in relation to the bilingual lexicon is that it is a 'steady-state' model (De Bot 1992:3), and, therefore, it leaves us with the question of how relevant the processes described by Levelt are for the basic L2 lexicon of a very uneven bilingual speaker. As De Bot points out, since the model is mostly appropriate to account for full or total command of the language, the extent to which the speaker is more or less competent in both languages should affect the organization of the lexicon and the relationships between its components.

It could be argued that very uneven bilinguals have a much more shared semantic store than more balanced bilinguals. Thus, as experience in the second language increases, speakers would move towards a more language-specific lexicon. Some experiments seem to confirm this idea. For example, Preston and Lambert (1969) and Mägiste (1985), in their experiments with Stroop techniques, found that uneven bilinguals experienced greater interference between languages. For more balanced bilinguals, on the other hand, their cross-linguistic interference was comparable to the interference in the monolingual version of the task. Furthermore, Potter *et al.* (1984), in their studies with proficient Chinese-English bilinguals and non-fluent English-French bilinguals, reached the conclusion that fluent and non-fluent subjects both retrieved translation equivalents in a way consistent with the concept mediation hypothesis. Surprisingly, they found no confirmation of the intuitively appealing notion that non-fluent bilinguals translate by word-to-word association.

But the nature of these conclusions needs to be revised. Kroll and Sholl (1992) present evidence suggesting that individuals in their early stages of L2 learning do make use of direct word connections in translation. They suggest that this may be the case because their subjects were probably more true beginners than those of Potter *et al.*'s, and, presumably, as speakers progress in their L2 competence, they would shift towards a concept mediation mode in L2 word processing. They further argue that the more direct lexical connections remain available to the more fluent speaker.

3.3. Methodological variables

The importance of the influence of experimental variables on the results of the different experiments has been highlighted by De Groot (1996):

> For the word level, two separate stores are assumed, one for each of the two languages of the bilingual; the representations at the meaning level are thought to be shared by the two languages. Different experimental tasks exploit the two different layers in the system, which is why they produce results that are 'seemingly' contradictory.
>
> (De Groot 1996: 339-340).

Indeed, a number of researchers have drawn attention to the crucial influence of the nature of tasks on the kind of results obtained in experiments. Durgunoglu and Roediger (1987), for example, stress that it is the processing demands of the retrieving tasks that is revealed in these experiments, rather than the organisation of the bilingual memory. According to these authors there are two basic types of experimental tasks:

- Conceptually driven tasks require subjects to focus on the conceptual representations lying behind the stimuli. Free recall and categorisation of lexical items are examples of this type of task.

- Data-driven tasks make subjects concentrate on the physical characteristics of the stimuli. Word-fragment completion and lexical decision techniques are examples of data-driven tasks.

Tasks demanding attention at the level of the word form tend to yield results consistent with the Separate Semantic Store view, whereas tasks concentrating on the level of word meaning tend to produce results in agreement with the Shared Semantic Store view. In numerous studies on translation task, De Groot has shown that the nature of the experimental linguistic stimuli plays a crucial role in bilingual lexical processing (De Groot and Nas 1991; De Groot 1992, 1993; De Groot, Dannenburg and Van Hell 1994). In particular, she looked at imageability, context availability, familiarity, word frequency, length of word and cognate status. She found that all these experimental factors correlate with the subjects' performance and warns against hidden effects produced by different characteristics in the stimuli. For example, concrete nouns are generally preferred to abstract nouns, verbs or adjectives because of their higher degree of 'imageability'; however, not all concrete nouns are equally 'imageable'. In using cognates, both members of the cognate pair may not be used with the same frequency in their respective languages. In fact, that will almost certainly be the case. An added problem is the fact that very frequent words are quite often polysemous words, not least of all in English. A word like *letter* can be translated into Spanish as *carta* (what you put inside an envelope), or as *letra* (every unit of the alphabet). Words like *bank* and *bench* both translate into Spanish as *banco*. The question is, when the word *banco* is activated in the speaker's mind, which meaning is being tapped? The more frequently used? And also, are the various meanings accessed simultaneously or successively?

4. Report on preliminary research study[3]

This section briefly reports on a cross-language lexical decision experiment with repetition priming with Spanish(L1)-English(L2) bilinguals, carried out in the Department of Applied Linguistics at the University of Edinburgh in the summer of 1995. The study was initially intended as a replication of a study published by De Bot and his collaborators (De Bot, Cox, Ralston, Schaufeli and Weltens 1995). They report on two different lexical decision tasks, one based on written data and one on auditory data. In the present study, I used the experimental design of their auditory task but presented visual (written) stimuli. What follows is only a short description; a full account of the study can be found in Sanitise Midland (1995).

A lexical decision task typically requires subjects to respond as quickly and as accurately as possible to whether a string of letters in a language constitutes a real word or a non-word in that particular language. Stimuli can be visual or auditory, and they can be presented once or more than once in the course of the experiment. If they are presented more than once, we then have a lexical decision task with priming. It is now accepted that, in monolingual versions of the task, the second presentation of the stimulus triggers shorter reaction times. In cross-linguistic lexical decision tasks, when there is a shortening in reaction times on the presentation of the translation equivalent, this is taken as support for a shared model of semantic representation. Conversely, no influence on reaction times is taken as support for the separate model. Priming can be obtained in two different ways: by repetition priming or by semantic priming. In repetition priming, the same stimulus is repeated, either in its identical form (same word, same language), or in a translated version. In semantic priming, the prime is a word related in meaning to the target word, whether within a language (*doctor-nurse*), or across languages (*médico-nurse*). As monolingual semantic priming has been shown to occur, the aim in bilingual research is to analyze if semantic priming also operates across languages.

4.1. Hypotheses and variables

In line with De Bot *et al.* (1995) this study tested four hypotheses, formulated as follows:

1 There will be a within-language repetition priming effect for both Spanish and English.

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2. There will be a between-language repetition priming effect for cognates, but no effect for translation equivalents.

3. The between-language repetition priming effect for cognates will be present in low proficiency bilinguals, but not in high proficiency bilinguals.

4. For low proficiency bilinguals the repetition priming effects will be stronger in the L1 —>L2 (Spanish—>English) condition than in the L2—>L1 condition. No such difference will be expected with high proficiency bilinguals.

To test these hypotheses, four independent categorial variables were selected (see table 1): language, level of L2 proficiency, level of cognates and how the items were repeated.

VARIABLES	CATEGORIES
1. LANGUAGE	-Spanish -English
2. L2 PROFICIENCY	-Low intermediate -Advanced
3. COGNATES	-'Sames' -'Differents'
4. REPETITION	-Repeated -Within language -Between language -Non repeated

Table 1. Four independent categorical variables and their respective categories

Cognates refers to the degree of similarity in form (written and spoken) between items with the same meaning in both languages. I was primarily interested in two types of items:

- Real cognates or 'sames': These are items which have the same meaning and whose form is also very similar; for example, teléfono and telephone, or pistola and pistol.

- Translation equivalents or 'differents': These are items which have the same meaning but whose form is very dissimilar; for example, cazador and hunter, or asa and handle.

The dependent variable was reaction times in the lexical decision task, measured in milliseconds.

4.2 Method

A set of 640 items, which comprised 320 words and 320 pseudo words was required to satisfy the experimental design. As one of the variables was degree of cognates, it was important for item validity that expert judgements of similarity and dissimilarity should be obtained.

4.2.1 Native judges and rating materials

An initial list of 270 pairs of Spanish-English words was drawn. Then, eight 'naive' native speakers of Spanish, with advanced knowledge of English, rated every pair for 'degree of similarity'. These judges were instructed, in writing, that words in every pair were similar in meaning but different in pronunciation and spelling, and that the degree of difference varied from pair to pair. In some pairs the words looked and sounded very different – for example, *armario / wardrobe* –, or very similar – for example, *acción / action*. In other pairs the words looked and sounded only relatively similar – or example, *botella / bottle* and *diamante / diamond*. Using a 7-point scale (see table 2), judges had to rate whether the words in each pair were 'totally different' (1 point), 'virtually identical' (7 points) or 'somewhere in between' (2 to 6 points). The judges' decisions were highly consistent ($\alpha = .9751$). For every pair of words I had eight ratings, on which mean (perceived 'degree of difference / similarity') and standard deviation (degree of agreement among judges) were calculated. Table 3 shows a selection of these data. These calculations allowed confident allocation of items to the different lexical categories required for the experiment: 'sames', 'differents' and fillers.

ESPAÑOL-INGLES	**ESCALA**	**ESPAÑOL-INGLES**	**ESCALA**
tijeras/scissors	1234567	camisa/shirt	1234567
venda/bandage	1234567	nube/cloud	1234567
naranja/orange	1234567	tormenta/storm	1234567
escalera/stairs	1234567	cebolla/onion	1234567
ducha/shower	1234567	mariposa/butterfly	1234567
padre/father	1234567	nariz/nose	1234567

Table 2. Selection of rating task for the judges. For every L1/L2 pair, judges had to rate the level of difference.

WORDS	**JUDGES' RATINGS**								**MEAN**	**DEVIATION**
1 cerradura/lock	1	1	1	1	1	1	1	1	1.000	0.00000
2 serpiente/snake	3	3	1	1	1	1	1	3	1.750	1.03510
3 bolsillo/pocket	1	2	1	1	1	1	1	2	1.250	0.46291
4 maleta/suitcase	1	1	1	1	1	1	1	1	1.000	0.00000
5 ola/wave	1	6	1	1	1	1	1	2	1.750	1.75255
6 periódico/newspaper	1	3	5	4	1	5	2	4	3.125	1.64208
7 lluvia/rain	2	3	1	1	1	3	1	3	1.875	0.99103
8 gato/cat	1	4	1	1	1	1	1	1	1.375	1.06066
9 cortina/curtain	5	7	5	4	5	5	5	6	5.250	0.88641
10 queso/cheese	1	4	1	3	2	3	4	4	2.750	1.28174

Table 3. Selection of judges' ratings. Mean and standard deviation for every pair of words yielded 'degree of similarity' and 'degree of agreement among judges', respectively.

4.2.2. Stimuli

From the initial list of stimuli (270 pairs), the experimental items were selected: 'sames' (40 pairs with the highest mean) and 'differents' (40 pairs with the lowest mean). From the middle of the list 160 pairs were selected as fillers, to act as distractors in the lexical decision task. The remaining 30 pairs were discarded. The number of items allocated to every category can be seen in table 4.

	SPANISH	**ENGLISH**	**Total**
'SAMES'	40	40	80
'DIFFERENTS'	40	40	80
FILLERS	80	80	160
PSEUDO WORDS	160	160	320
TOTAL			640

Table 4. Number of words and pseudo words and its distribution in the different categories

- The experimental items in Spanish are 40 'sames' and 40 'differents'. The experimental items in English are the corresponding translations of the 80 Spanish items.

- The fillers were the 160 middle-ground pairs (80 items for each language). For every pair, only the Spanish word or the English word formed part of the filler bank.

- The number of pseudo words matches the number of experimental items and fillers, i.e. 320 (160 for each language). I understand 'pseudo words' in Groot and Nas' terms: "letter strings that conform to the orthography and phonology of the experimental language, but that carry no meaning" (Groot and Nas 1991: 95). My pseudo words were created by an English native speaker by changing, adding or deleting one letter in every one of the real words. There is a selection of these items in table 5.

	SPANISH		**ENGLISH**	
	WORDS	PSEUDO WORDS	WORDS	PSEUDO WORDS
'SAMES'	estatua pistola té capitán guitarra	espatua pitola tém sapitán guiarra	statue pistol tea captain guitar	satue pristol tean captaine gitar
'DIFFERENTS'	cerradura maleta sombrero bandera cazador	cerradua laleta sombero bamdera carrador	lock suitcase hat flag hunter	loock sitcase hap flug thunter
FILLERS	cuello mano bigote pastel ajo	cuellio manoz bilgote pascel zajo	road drum farm arm sheet	troad brum fam larm cheet

Table 5. Selection of 'SAMES', 'DIFFERENTS' and FILLERS for both languages, and their corresponding pseudo words

The 640 items were presented in four separate single language 'blocks': two blocks were in Spanish and the other two in English. It was decided to alternate language in presentation to ensure that presentation of the repeated items was not delayed by more than ten minutes (ten minutes was the duration of every block). All subjects in the experiment were presented with the same material but in a different random sequence, to avoid any effect due to the order of presentation of the stimuli.

4.2.3 Subjects

Forty-five native speakers of Spanish did the experiment. For experimental reasons only 40 of them were selected for the study. They were all unpaid volunteers whose level of proficiency in English was either low intermediate or advanced. There were 20 subjects in each level. All subjects were briefly interviewed about language background and current usage of English. Most of the advanced subjects were recruited from postgraduate courses at Edinburgh University and had lived in Scotland between one and five years. Most people in the low group had come to Scotland to do a three-week English language course for low intermediate students at the Institute for Applied Language Studies, also at Edinburgh University.

4.2.4 Procedure

Subjects were tested individually in a single session of about 45 minutes. They sat in front of an LCIII Apple Macintosh computer and, were in full control of the experiment (run using the PsyScope programme). All the necessary instructions appeared on the screen, in Spanish. Subjects were informed that they were going to see a number of letter-strings on the screen, either in Spanish or in English, and that they could be true words or pseudo words. Using a two-button box, subjects had to decide as quickly and as accurately as possible whether the letter string was a real word or not. A bleep after every response informed the subject whether he or she had answered correctly. However, feedback on speed was not provided. The experiment started with a small two-block practice session to allow familiarisation with the task.

4.2.5. Analysis and results

The data was filtered to remove incorrect responses and reaction times longer than 1400 milliseconds to avoid spurious effects of exceptionally long latencies, due, for example, to distraction or interruption of the task. Incorrect responses were also discarded. The analysis was thus carried out on a total of 2975 responses, with latencies ranging from 320 to 1395 milliseconds and a mean of 654.1 milliseconds for the whole experiment. Figure 5 presents the marginal means and standard deviations for both levels of the four variables in the study. Figure 6 presents mean reaction times for all the categories, together with baseline conditions. A factorial ANOVA yielded three significant main factor effects (proficiency, language and within/between repetition), no first order interaction effects, and one significant second order interaction effect (proficiency x language x repetition).

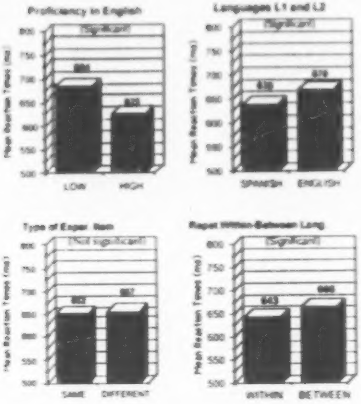

Figure 5. Marginal mean reaction times to lexical decision task for the two levels of the four variables: level of proficiency, languages (L1 and L2), degree of similarity in the two words of every experimental pair, and mode of repetition in relation to language. For every variable, except type of experimental item, the difference between both means is significant.

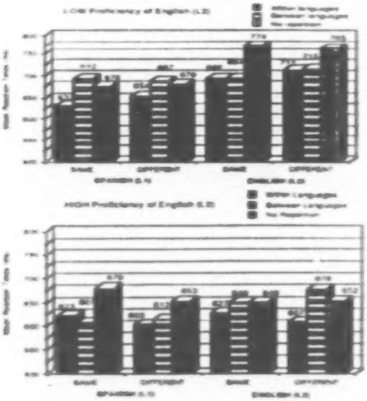

Figure 6. Mean reaction times for the LOW group and the HIGH group, for no repetition (baseline condition), within-language repetition and between-language repetition, crossed with languages and item type.

The results of the factorial analysis for the four hypotheses mentioned at the beginning of this report are as follows:

1. 'There will be a within-language repetition priming effect for both Spanish and English'. The results support this hypothesis [F (1.2959)= 11.28, p < .05].

2. 'There will be a between-language repetition priming effect for cognates but no effect for translation equivalents'. There is no interaction effect between repetition and type of item [F (1.2959)= 0.78, p > .05]. This hypothesis is not supported.

3. 'The between-language repetition priming effect for cognates will be present in low proficiency bilinguals, but not in high proficiency bilinguals'. There is no interaction effect between proficiency and repetition [F (1.2959)= 0.07, p > .05]. The outcome does not support the hypothesis.

4. 'For low proficiency bilinguals the repetition priming effects will be stronger in the L1 —>L2 (Spanish—>English) condition than in the L2—>L1 condition. No such difference will be expected with high proficiency bilinguals'. There is no interaction between proficiency and type of item [F (1.2959)= 1.34, p > .05]. The hypothesis is not confirmed.

Hardly surprising are the significant results that refer to two of the main effects:

- The low proficiency group showed significantly slower reaction times (by 60 ms) than the high proficiency group [F (1.2959)= 73.63, p < .05].

- The reaction time for Spanish was significantly shorter (on average 30 ms quicker) than English [F (1.2959)= 22.27, p < .05]. Again, this is hardly surprising, since Spanish is the subjects' native language.

More important is the significant second order effect proficiency x language x repetition [F (1.2959)= 11.21, p < .05], which is the only interaction effect in the study (see figure 7).

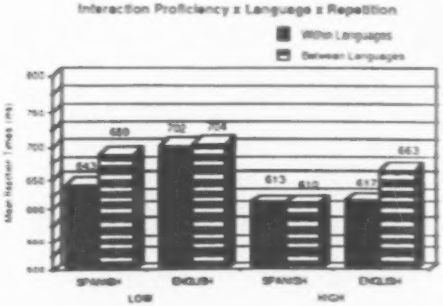

Figure 7. Mean reaction times for within/between repetition across proficiency and language

The main results of the experiment can then be summarised as follows. There are differences in reaction times for language, proficiency and repetition condition taken as main factors. There is also an interaction effect between these three factors. Most importantly, no differences have been observed between cognates and translation equivalents. We examine these results in the next section.

4.4 Discussion

As indicated at the beginning of this report, the aim was to explore four variables: type of priming, degree of cognates, level of proficiency and language. In line with the results of the study that we aimed to replicate, we found no significant patterns in relation to degree of cognates. As regards type of priming and the relationship with level of language proficiency, I find that these results (within-language effect) are in line with those of other studies: Kerkman (1984, cited by De Bot *et al.* 1995), De Bot *et al.* (1995) and Woutersen, Cox and De Bot (1994), to mention but a few. Generally, in connection with cognates, findings are very often conflicting. Kerkman (1984), Monsell, Matthews and Miller (1992), and Gerard and Scarborough (1989) found cross-language priming for cognates and semi-cognates, but no priming for translation equivalents. On the other hand, De Bot *et al.* (1995) and Woutersen *et al.* (1994) found no differences for cognates and translation equivalents.

At this point it is relevant to discuss Monsell *et al.*'s work (1992) briefly. They worked with Welsh-English bilinguals who had to name pictures in Welsh. Half the stimuli had been primed by words in Welsh, given in response to Welsh definitions, or by words in English, given in response to English definitions. They found considerable amount of within-language facilitation. Crucially, they did not find facilitation between languages when the equivalents differed in their phonological form. As there is no priming, they argued, from repeated activation of meaning alone or from repeated activation of phonological form alone, they hypothesised that the locus of cross-language priming lies between the word's meaning and the word's form.

A further point to bear in mind is the nature of words used in the present experiment. In her review of word-type effect on bilingual processing, De Groot (1993) writes in favour of a mixed representation of the bilingual lexicon, arguing that concrete nouns and cognates are more likely to be stored in a common memory system than are abstract nouns. This may be true, but distinguishing between concrete and abstract nouns might not be enough. Within concrete nouns, the degree of 'imageability' can also play a role. All our nouns were concrete nouns, but we cannot be sure that they all had the same degree of imageability. It could be hypothesised that highly 'imageable' words could in fact conjure up a mental picture much more readily, and could prime their corresponding translation equivalents regardless of their surface similarity, i.e. regardless of whether they are true cognates or not. As one of our judges put it: "I know that *manzana* and *apple* are different, but to me they are the same thing, I picture a *manzana-apple* very readily in my mind". It could be argued, then, that if a word and its translation have a high degree of imageability, they could prime one another more than two items with a low degree of imageability, whether or not they look and sound the same.

5. **Where do we go from here**?

I would now like to explore two possible avenues for research. The first line of work follows directly from the preliminary study and it involves the use of auditory material. One of the reasons why I did not obtain the expected cross-language repetition effect may have been the influence of the phonological form of the stimuli. It could well be that my 'sames' were not as similar as I thought they were. The phonological systems in Spanish and English are really very different. Some of the 'same' pairs, like *cocodrilo* and *crocodile*, *plato* and *plate*, or *bebé* and *baby*, may have not been perceived as very similar by our experimental subjects. If one reads these words mentally, they may not 'sound' as similar as they 'look'. To put it very simply, to the non-linguist, some English items have some diphthongs that the Spanish items do not have, which may, in fact, make the pairs sound very different. The rating instructions given to the native judges encouraged them to look for similarities both in spelling and pronunciation. But maybe we were mixing two aspects, overly different, under the single term 'similarity'. Certainly, Munnell *et al.*'s work (1992) appears to confirm this possibility. It therefore looks as if a similar study with auditory stimuli, or a combination of auditory and visual stimuli, could perhaps shed some light on the problem of how important the interference of 'mental pronunciation' is in processing cross-linguistic visual (written) material. It may be the case that interference from 'mental pronunciation' in reading-type tasks is more likely than the interference of 'mental spelling' in auditory-type tasks. As yet, we simply do not know.

The second line of research that I would like to explore relates to the relationship between form and meaning in the activation of cognates. Gerard and Scarborough (1989) looked at Spanish-English cognates, non-cognates and homographic non-cognates (words spelt identically but with different meaning, e.g. *quince*). As they had hypothesized, they found cross-language facilitation for cognates, but not for translation equivalents. They further found cross-language facilitation for homographic non-cognates. This may be indicative that 'form' is much more likely to trigger cross-language facilitation than 'meaning'. One possible explanation for this could be that lexical entries are connected interlingually primarily through form. Since not many researchers have worked with homographic non-cognates we still do not know exactly how much of cross-language cognate facilitation is due to form-similarity and how much is due to meaning-similarity.

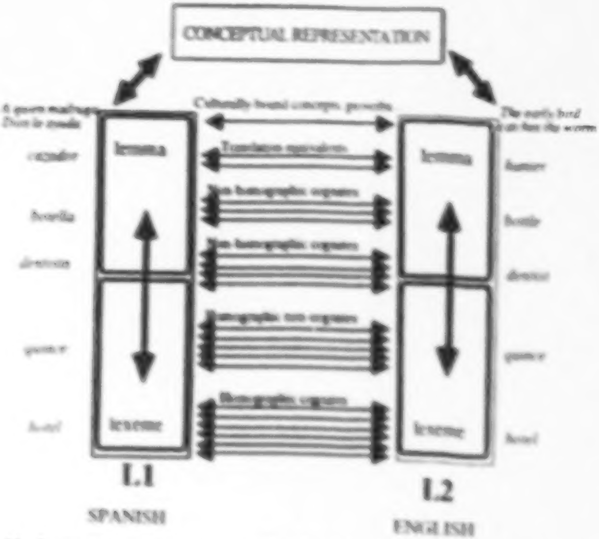
CONCEPTUAL REPRESENTATION
A quien madruga
Dios le ayuda
Culturally bound concepts, proverbs
The early bird
catches the worm
cazador
lemma
Translation equivalents
lemma
hunter
botella
Non-homographic cognates
bottle
dentista
Non-homographic cognates
dentist
quince
Homographic non-cognates
quince
hotel
Homographic cognates
lexeme
lexeme
hotel
L1
L2
SPANISH
ENGLISH

Figure 8. Possible degrees of cross-language activation for different degrees of 'cognates' and 'homographicness' combined. The number of arrows illustrates the hypothesis that activation is a function of ***form*** *and* ***meaning*** *combined.*

The hypothesis presented in figure 8 suggests that there is a continuum in which activation is a function of form and meaning combined. Form on its own is more 'activation-generating' than meaning on its own, but effects are accumulative. So, the greatest activation would take place when form and meaning are identical, as in the case of homographic cognates (e.g. hotel, for Spanish and

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English) and the smallest activation would occur when only meaning is shared, as in translation equivalents or culturally-bound concepts.

There are a number of methodological issues, though, which need to be taken into consideration. One problem is whether cognates share the same relative frequency of use in their respective languages. For example, the Spanish word *quince* ('fifteen') is relatively frequent, however, the English word *quince* is extremely infrequent. A second methodological hurdle is to actually find enough experimental items which fit into the categories of the proposed hypothesis. Finally, another important aspect refers to the actual presentation of stimuli: if activation effects of cross-linguistic priming were highly transient, then the time lag between presentation of primes and presentation of targets must be carefully controlled for.

6. Conclusion

I hope to have shown that the question of whether the bilingual lexicon is organized in one or two semantic stores is an over-simplification. To address the issue in a more realistic way we need to investigate under what circumstances the semantic knowledge of both languages can be separated and under what circumstances this knowledge operates in a combined way. The literature review shows that, more and more, researchers are moving towards models of mixed-representation of bilingual lexical knowledge. It certainly fits the evidence better to think of the bilingual lexicon in terms of a dynamic structure comprising various subsets. The number and defining criteria of these subsets are not yet fully understood, nor are the relationships between them. Thus, more research would be welcome to look into specific questions like, to name just a few, the asymmetry in the lexical connections between languages, the notion of lexical proficiency, the influence of the cognitive nature of the experimental tasks and the comparison between visual and auditory bilingual lexical processing.

Notes

[1] I am aware that in SLA literature 'uneven' bilinguals are normally referred to as 'unbalanced' bilinguals, but given the unfortunate connotations of the word 'unbalanced' when applied to the mind, I have decided to favour the use of the much more neutral term 'uneven'.

[2] For example, for a Spanish-English bilingual, a word like *cementerio* brings a set of associations completely different from the word *cemetery*. For Spanish speakers cemeteries are morbid places, to be kept away from people's lives, and physically far from the centre of the town. In Britain, on the other hand, cemeteries are much more integrated in the city landscape, e.g. frequently they are part of a public park.

[3] Thanks are due to the people that made this study possible: Dr. Dan Robertson from the Department of Applied Linguistics, for his invaluable help; the Department of Linguistics, for allowing me to use their computer laboratories; and the forty-five participants in the experiment, who so generously lent me an hour of their time.

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JAPANESE LEARNERS' ACQUISITION AND USE OF THE ENGLISH ARTICLE SYSTEM

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Abstract

A multiple-choice article insertion test was given to 99 Japanese EFL college students to examine (1) whether the presence or non-presence of a modifier affected the choice of the definite article, and (2) whether the choice of the definite article was influenced by reliance on knowledge of commonly occurring sequences (e.g. Where's the X ?, the first X, *etc.). As regards the first question, the study showed that the subjects were more accurate when the NPs modified by a PP or a relative clause required the definite article than when they did not. Thus the subjects tended to use the definite article for modified NPs even if there was, in fact, more than one potential entity to which the modified NP referred. As regards the second question, the study showed that the subjects were significantly more accurate when the use of 'the' was in accord with the commonly occurring sequences than when it was not. The pedagogical implications of these results are ussed.*

1. Introduction

Since the Japanese language has no formal equivalent of the English article system, and English articles (e.g. the, (an), Ø)[1] have little lexical meaning, Japanese EFL learners often have difficulties in acquiring the rules of the English article system (see Whitman, 1974: 253, Master 1990: 461). Furthermore, since relatively little research (e.g. Yamada and Matsuura, 1982; Hiki, 1992) has been carried out in the area of English article acquisition by Japanese EFL learners, much work remains to be done to clarify the major difficulties which Japanese learners (or possibly ESL learners as a whole) have in acquiring the rules of the English article system and explore any implications for how English articles should be taught. The purpose of the present study is to see whether Japanese learners have a tendency to link the presence of a modifier after a head noun to the use of the definite article, which is not necessarily correct. If this tendency is found, it may imply the need for explicitly teaching that the presence of a modifier after the head noun does not necessarily guarantee the use of the definite article. The present study also examines whether the learners are dependent on commonly occurring sequences (e.g. *Where's the X?, the first X,* etc.) in their choice of articles irrespective of whether there is more than one potential referent in the situation relevant to speaker and hearer. If the study finds such dependency, then it may imply the need to caution against being too dependent on such sequences, and to teach that the definite article cannot be used when there is more than one alternative choice of referent available in the situation.

1.1 When to use the definite article

Since the present study is concerned with the choice of the definite article, I shall begin by discussing in what circumstances the definite article can occur. First of all, the referent should be assumed known to the hearer ([+HK]) as much research[2] (e.g. Brown (1973), Heubner(1979), Parrish (1987), Thomas (1989)) suggests.

(1) I saw a funny-looking dog today (Brown, 1973: 342).

(2) Go ask the guy over there (Parrish, 1987: 364).

Thus the definite article can be used in example (2), but it cannot be used in example (1) even if the speaker 'does not have just any canine in mind but a very definite dog about whom he has a quite a lot of information' (Brown, 1973: 343) because 'a funny-looking dog' is not assumed known to the speaker.

Furthermore, the use of the definite article is possible only when the referent exists and is unique within the range of potential referents which are mutually manifest to both speaker and hearer on-line (Hawkins, 1991 : 414). Thus, the definite article cannot be used when there is more than one possible referent in the situation relevant to both speaker and hearer.

(3) Would you like a chocolate? (Lacey 1977: 36)

Therefore, a person with a box of chocolates would say 'a chocolate' as in (3) instead of 'the chocolate(s)' even if the referent(s) is(are) thing(s) that you have already seen before. As Lacey (1977: 36) explains, the indefinite article should be used when the choice is not restricted (see McEldowney 1977: 101 for a similar example). Thus, even if the referent is assumed known to both speaker and hearer, the definite article cannot be used if the referent is not unique (or if there is more than one possible referent) in the situation which is relevant to both speaker and hearer.

The restrictions described above should apply irrespective of whether the head noun is modified or not. Thus the use of 'the' instead of 'a' in example (4) would produce a syntactically correct sentence but the sentence would only be appropriate if it is known that there is only one person in the situation who meets the criteria.

(4) I am looking for a person who can type more than 80 words a minute. (Koizumi 1989: 64)

The present study, therefore, examined one of the conditions to be met for the use of the definite article: the uniqueness of the referent in the situation relevant to both speaker and hearer on line. In order see to what extent the subjects understand what is meant by uniquely identifiable reference, the subjects' performance was compared in two conditions: (1) a modified NP of which the referent is unique in the situation and therefore requires the definite article, (2) a modified NP which is not unique and therefore requires the indefinite article. If the accuracy in the second condition (i.e. (2)) were lower than that in the first condition (i.e. (1)), it might indicate the subjects' tendency to use the definite article in a modified NP condition, and that the subjects do not understand that the definite article cannot be used where there is more than one possible referent in the situation relevant to speaker and hearer.

1.2 Knowledge of commonly occurring sequences and accuracy of definite article use

In the previous section, it was argued that the definite article can only be used when the referent is unique within a set of possible referents which are manifest to both speaker and hearer on line and that if the learner uses the definite article based on the rule, then he or she would use the definite article only when the referent of a NP is unique irrespective of whether the head noun is modified or not. In this section, the author argues that if the learner knows the rule just described, then he or she should also be able to use the definite article correctly irrespective of whether the relevant NP contains a commonly occurring sequence (e.g. *the first X*, etc.).

According to Pawley and Syder's view (1983), producing fluent stretches of connected discourse exceeds human capacities if novel speech has to be created from scratch. Therefore, fluent linguistic encoding is considered to be partly dependent on a repertoire of commonly occurring 'formulaic sequences (or structures)'. Similarly, Beaumont and Gallaway argue that L1 article selection (particularly at the earliest stages) is often based on what they call learned chunks or memorized sequences (Beaumont and Gallaway, 1994: 166-170) which include the indefinite article used within the scope of negation (e.g. *I haven't got an X*) and in naming or existential utterances (e.g. *He's an X, There's an X*, etc.), or in object position after a limited number of verbs (e.g. *I've got an X, We saw an X, Yesterday I met an X*, etc.). They also include the definite article used in locative prepositional phrases (e.g. *in the X, cross the X*, etc.) and in the subject noun phrases introducing given information (see Rutherford 1987: 167 for "topic-comment structure") as well as some "co-occurrence restriction" examples (e.g. *the first, the next, the same, the thing is*, etc.). Thus Beaumont and Gallaway (1994) seems to suggest that L1 children tend to select articles based on the knowledge of commonly occurring sequences (e.g. the definite article (i.e. *the*) often precedes the word *first*).

Some may argue that some of these commonly occurring sequences are instances of rule-based language use rather than formulaic language use. For example, the use of *the* in (5) can be explained by the logical uniqueness implied by the adjective *last* because the book has only one last section. I agree, and in fact most examples of the commonly occurring sequences described above may be explainable in logical, syntactical terms. However, if the use of the definite article in sentences like (5) is far more accurate than that in sentences like (6), it would be difficult to explain such a result, because the rule should be equally available in both situations.

(5) I began the last section of the book (Berry, 1993: 33).

(6) Now it seems there might be a third choice (Berry, 1993: 34).

Furthermore, there are many sentences like (6). Therefore, it seems important that the learner has the ability to choose the correct article irrespective of whether the NP contains a commonly occurring sequence or not.

The present study also compared two English language proficiency groups (high and low proficiency groups). Both groups were expected to be less accurate in the non-formulaic use of the definite article (cf. (6)) than in the formulaic use of the definite article based on commonly occurring sequences (cf. (5)) because Parrish (1987)[3] indicated second language acquisition moves from formulaic language use to rule-governed language use. In other words, a lower accuracy is expected for the non-formulaic use of the definite article where the knowledge of rules rather than commonly occurring sequences can only lead to correct selection of the definite article.

2. The studies

2.1. Hypotheses

The main purpose was to investigate to what degree the learner's selection of the definite article is rule-governed. The following two hypotheses were examined:

(1) the presence of a modifier after a head noun would tend to make the subjects choose the definite article even if the referent is not unique in the situation relevant to speaker and hearer.

(2) the choice of the definite article in formulaic language use (i.e. commonly occurring sequences (e.g. *the third X, in the X*, etc.) is more accurate than in rule-governed language use.

2.2 Subjects

18 Yamaguchi University subjects and 93 Matsuyama University subjects participated in the experiment. The subjects were given a multiple choice cloze test (11 items) and a multiple choice article insertion test (60 items: see **Appendix**). The cloze test was chosen from those in Sato (1988: 186-187) and was about the tea party scene in *Alice in Wonderland*. The data from 12 subjects were excluded from the analysis because they could not complete the two tests in 15 minutes. The top 30 of the remaining 99 subjects in the cloze test were regarded as the more proficient learners of English (**HIGH**) while the bottom 30 were regarded as the less proficient learners (**LOW**). There was a significant difference between the two proficient groups in the mean scores for the cloze test (t = 14.854, df = 58, $p < .001^*$).

2.3 Test materials and procedure

The article insertion test (**ARTICLE** for short), which consisted of 60 questions, asked the subjects to complete each question sentence by circling either *the*, *a(n)* or *X* (the subjects were told to select *X* when neither *the* nor *a(n)* was necessary).

In order to test the first hypothesis, 4 types of NPs with modifier were prepared:

(a) **PP-DEF** (note: questions 9, 25, 37, 59 belong to this type)

A: I often forget (a / the/ X) names of my students recently.

B: You are getting old.

(b) **PP-INDEF** (note: questions 26, 34, 50, 53 belong to this type)

Freezing is (a / the / X) way of preserving food.

(c) **Relative Clause - Definite: RC-DEF** (note: questions 35, 40, 45, 47 belong to this question type)

I looked for (a / the / X) place where Mr. Ryoma Sakamoto was born but I couldn't find it.

(d) **Relative Clause - Indefinite : RC-INDEF** (note: questions 15, 55, 56, 60 belong to this question type)

In some countries, (a/ the/ X) person who steals a loaf of bread could be sent to prison.

Category (a) consisted of 4 questions in which the head noun was modified by a prepositional phrase and the referent was definite (**PP-DEF**) and category (b) consisted of 4 questions in which the head noun was modified by a prepositional phrase but the referent was indefinite (**PP-INDEF**). In the same way, category (c) consisted of 4 questions in which the head noun was modified by a relative clause and the referent was definite (**RC-DEF**), and category (d) consisted of 4 questions in which the head noun was modified by a relative clause and the referent was indefinite (**RC-INDEF**).

In order to test the second hypothesis, two types of questions were compared:

(e) **Commonly Occurring Sequences: COMMON** (note: questions 7, 11, 21, 32 belong to this question type)

I asked him to go with me. But (a / the / X) first word he said was ' No. '

(f) **Non-Commonly Occurring Sequences: NON-COMMON** (note: questions 19, 22, 43, 51 belong to this question type)

She often dreams of swimming in (a / the / X) beautiful sea off Greece.

Category (e) consisted of 4 questions in which the knowledge of commonly occurring sequences could lead to the correct answer (**COMMON**). Category (f) consisted of 4 questions in which the knowledge of such sequences could lead to the wrong article selection (**NON-COMMON**). In the present study, the author, using the idea of memorized sequences (Beaumont and Galloway 1994), operationally defined the following sequences as commonly occurring sequences: the definite article used in some fixed contexts (e.g. *the first x* (question 11), *the only x* (question 32), *where is the x?* (i.e. the definite expression follows '*Where is*' (question 7)), and the definite article used in locative prepositional phrases (e.g. *on the X* question 43). As Table 1 shows, the frequency of the commonly occurring sequences used in the test (e.g. the occurrence of *the* in the sequence ___ *first x*) is very high in the LOB corpus from h.dat to r.dat. Therefore, it seems legitimate to regard the sequences used in the test as commonly occurring sequences.

Table 1 The Frequency Statistics of Collocation Based on the LOB Corpus Data (from n.dat to r.dat)

Sequences	1)	2)	[illegible]
Where's ___ ?	the (3)	she (1)	Corporal (1)
___ first	the (169)	at (19)	The (18)
___ third	the (9)	J (3)	a (3)
___ only	the (56)	not (53)	was (35)
There (there) is ___	no (40)	a (33)	an (8)
In ___	the (1919)	a (444)	his (232)
___ second	the (42)	a (26)	The (10)

Three most frequent collocates are listed: the number within parenthesis is the frequency which each collocate occurred in the position marked with the underline ('___').

Finally, the total score of the article insertion test (ARTICLE) as well as those of the above 6 types of questions were simply calculated by counting the number of correct responses. In the analysis of the test result, 2 (the high and low groups) X 6 (types of questions) two-way ANOVA (analysis of variance) was used because the analysis involved the comparison of more than two means (with more than two means, t test cannot be used because the use of t test increases the chance of finding a

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spuriously significant result) and the two-way ANOVA can look at the interaction effect (proficiency group ~ question type) whereas one-way ANOVA cannot.

3. Results

Table 2: The mean accuracy of the subjects in the six types of questions

VAR.	OVERALL (n=99)			HIGH (n=30)			LOW (n=30)		
	Mean	(SD)	%	Mean	(SD)	%	Mean	(SD)	%
ARTICLE	32.5	(5.87)	54%	36.6	(5.86)	61%	27.8	(3.24)	46%
PP-DEF	2.02	(1.00)	51%	2.40	(1.00)	60%	1.90	(0.71)	48%
PP-INDEF	1.81	(1.20)	45%	2.00	(1.41)	50%	1.37	(0.81)	34%
RC-DEF	2.11	(1.06)	53%	2.47	(0.94)	62%	1.60	(0.89)	40%
RC-INDEF	1.49	(0.98)	37%	1.60	(0.81)	40%	1.27	(1.08)	32%
COMMON	2.12	(0.96)	53%	2.53	(0.86	63%	1.77	(0.90)	44%
NON-COMMON	1.62	(0.92)	41%	1.77	(0.97)	44%	1.30	(0.88)	33%

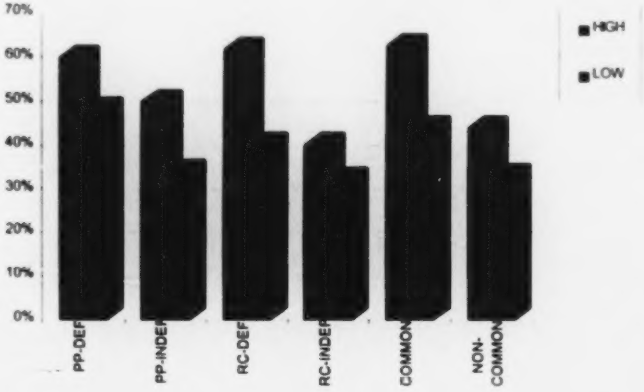
Standard Deviations (SD) are shown in parentheses, and the symbol "%" indicates the percentage ratio of the mean score to its maximum score (ARTICLE : 60, and each of the 6 types of questions : 4) . 'HIGH' means the more proficient group and 'LOW' means the less proficient group.

The result of 2 (PROFICIENCY GROUP: the high and low proficiency groups) X 6 (QUESTION TYPE: types of questions) two-way ANOVA analysis showed that the overall effect for GROUP was significant (*F* (1,58) = 26.34, *p* < .001), but there was no significant GROUP X TYPE interaction effect. This indicates that the more proficient group was constantly better than the less proficient group in all 6 questions types (cf. Table 2 and Figure 1).

Since the ANOVA analysis showed that the overall effect for TYPE was also significant (*F* (5,290) = 7.23, *p* < .001),an ad-hoc Tukey test[illegible] was conducted to discover the source of the significant effect for TYPE.

As Table 2 and Figure 1 show, the subjects were more accurate when the NPs modified by a PP required the definite article (PP-DEF: M=2.02, n=99) than when they did not (PP-INDEF: M=1.81, n=99) although the Tukey test does not show a significant difference between PP-DEF and PP-INDEF. A greater difference was found in the case of NPs with a relative clause: the Tukey test (p < .05) showed the subjects were significantly more accurate when the NPs modified by a relative clause (RC-DEF: M= .11, n=99) required the definite article than when they did not (RC-INDEF: M=1.49, n=99) . Since the accuracy for PP-DEF, RC-DEF were higher than that for PP-INDEF, RC-INDEF respectively, there seems to be a general tendency for the subjects to use the definite article for the NPs modified by a PP or a relative clause even if there was more than one possible entity to which the modified NP referred. Thus the subjects did not seem to understand that the presence of a modifier does not necessarily justify the use of the definite article.

Figure 1 The mean accuracy of the subjects on the six types of questions (%)



As regards the second hypothesis, the Tukey test ($p < .05$) showed that the subjects were significantly more accurate when the use of *the* was in accord with commonly occurring sequences (COMMON: M= 2.12, n= 99) than when it was not (NON-COMMON: M= 1.62, n= 99). The result pattern was exactly the same for both proficiency groups: the proficient group was consistently more accurate than the less proficient group on COMMON (M=2.53 for the high proficiency group and M=1.77 for the low group) as well as on NON-COMMON (M=1.77 for the high group and M=1.30 for the low group)[6]. Thus, regardless of English language proficiency, the subjects tend to be more accurate with COMMON than NON-COMMON. The pedagogical implications of this result will be discussed in the next section.

4. Discussion

The accurate selection of the definite article probably requires understanding that a modifier after the head noun does not necessarily justify the use of the definite article. In other words, the correct selection of cataphoric *the* requires understanding that *the* cannot be used when there is more than one possible referent in the situation relevant to speaker and hearer. In this study, the subjects were less accurate when the NP modified by PP required the indefinite article (PP-INDEF) than when it required the definite article (PP-DEF). In the same way, in the NPs modified by a relative clause, the subjects were more accurate in the use of articles when the NP modified by a relative clause required the definite article (RC-DEF) than when it required the indefinite article (RC-INDEF). Thus there was a general tendency for the subjects to use *the* in front of modified NPs irrespective of whether the referent of a modified NP was unique in the situation. This seems to have an important pedagogical implication because the learner may benefit from being explicitly taught that *the* cannot be used when the referent is not unique in the situation relevant to speaker and hearer.

The second hypothesis was also supported in that the definite article was more accurate in formulaic language use (COMMON) than in rule-based language use (NON-COMMON). Assuming the tendency of English native speakers to rely on a repertoire of memorized expressions for a fluent encoding of a message, it may be natural that the subjects of the present study (not only the less proficient learners but also the more proficient learners) showed a general tendency to rely on memorized sequences rather than grammatical rules in their choice of articles. Yet it is important to

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note that the native speaker's competence also includes the ability to select the right article irrespective of whether the NP contains a commonly occurring sequential pattern. In addition, it seems practical as well as beneficial to teach Japanese learners of English the conditions in which the definite article can occur (e.g. the definite article cannot be used when the referent is not unique in the situation relevant to speaker and hearer).

However, further research is necessary to specify in more detail the restrictions on where the definite article can occur. For instance, Zehler and Brewer (1982: 1273-4) explain that the definite article can be used in certain contexts even if the referent is not unique (e.g. 'John got hit on the leg by a bat.'[7]) if (a) the referent is one of a few like-items available; (b) the specification of the item is not particularly relevant for discourse continuity; and (c) the item is an intrinsic, highly predictable, element of the discourse context frame[8]. The specification of when the definite article can be used seems necessary in future research (including the specification of what is meant by 'a few like-items' relative to 'many like-items').

Notes

[1] *Some* may also be considered as an article. For example, Whitman (1974: 256) points out that *May I have some water* rather than *May I have water?* is probably preferred because *water* (without *some*) sounds as if the speaker is referring to its conceptual character rather than its real character.

[2] Although Brown (1973), Parrish (1987), Thomas (1989) defines [+definite] as [+SR (specific referent) + HK (assumed known to hearer), Master (1990: 467) seems to suggest that the [±SR] distinction may not necessarily be relevant to the selection of articles.

[3] Parrish (1987) showed in her longitudinal study of a Japanese learner that the subject moved from correct article use based on memorized sequences to erroneous use of articles caused by over-generalization of acquired rules to idiomatic use.

[4] Dan Robertson (personal communication) points out that, although it is a common practice to report values of p which are significant at various levels of significance (e.g. $p < 0.05$, $p < 0.01$) as a way of indicating the relative size of the effects as I am doing here, this practice may not be accepted by some as legitimate because the logic of the null hypothesis test requires that one establishes his or her criterion of statistical significance before conducting the test, and if the chosen level of significance is $p < 0.05$, then, this should be the only critical value which one should report, for all significant results.

[5] Dan Robertson (personal communication) points out that the Tukey test is appropriate here, since it is more powerful than the Scheffe test when all possible pairs of means are compared (see Kirk 1982 for further discussion of post-hoc comparison tests).

[6] The difference between the two groups was significant in COMMON ($p < .05$), but it is not in NON-COMMON by the Bonferroni test (which is commonly used instead of the t test when multiple comparisons of means are made in order to find a spuriously significant result). The Bonferroni test, based on Student's t statistic, adjusts the observed significance level for the fact that multiple comparisons are made. For example, if the pre-determined alpha level for the whole experiment at 0.05 and you want to carry out multiple comparisons among 6 means, then there are (6x5)/2 = 15 possible pairwise comparisons, so you set the alpha level per comparison at 0.05/15 = 0. 0033 and then carry out t tests in the usual way and compare the observed value of t with the critical value of t for the relevant degrees of freedom at an alpha level of 0.0033. In the present study, I set the alpha level per comparison at 0.05/6 = 0. 0083 since there were only 6 pairwise comparisons between the two proficiency groups (e.g. the comparison of means of the two groups in COMMON) (see Myers (1979) for further discussion). The significant difference between the two groups for COMMON but not for NON-COMMON seems to indicate that the major difference between the two groups lies in the knowledge of

commonly occurring sequences rather than that of the rules of the English article system. This also implies the possibility that even the proficient learners might benefit from being taught that the definite article cannot be used where there is more than one potential referent in the situation relevant to speaker and hearer.

[7] See Pica (1983: 224) for a similar example.

[8] H. Trappes-Lomax (personal communication) points out that the sentence 'He took me into the hall and turned on the light (or chandelier)" is perfectly acceptable, while the sentence 'He took me into the hall and turned on the golden chandelier' is much less likely to be acceptable because the hearer is by no means expected to anticipate that there will be a 'golden' chandelier in the hall.

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APPENDIX

The Article Insertion Test

(a) **PP-DEF**

(9) As soon as I got into the lift, I asked the operator to push (a / the / X) button for the 6th floor.

(25) (A / The / X) beginning of the movie was boring.

(37) A: I often forget (a / the / X) names of my students recently. B: You are getting old.

(59) I am studying (a / the / X) development of English agriculture.

(b) **PP-INDEF**

(26) Yesterday Tom saw (an / the / X) advertisement for a new drink. Then he went to the shop and bought a bottle of the new drink.

(34) Freezing is (a / the / X) way of preserving food.

(50) Robert is listening to (a / the / X) record of Mozart music.

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(53) I borrowed (a / the / X) book of 16th century British history.

(c) **Relative Clause - Definite: RC-DEF**

(35) (A / The / X) beef that is produced in the United Kingdom is not allowed to be exported to other European nations.

(40) I looked for (a / the / X) place where Mr. Ryoma Sakamoto was born but I couldn't find it.

(45) A: Have you got (a / the / X) record which you promised to lend me the other day? B:I am sorry, I forgot to bring it.

(47) When the phone rang, Father was reading (a / the / X) new book he got for his birthday.

(d) **Relative Clause - Indefinite : RC-INDEF**

(15) When she was studying she heard (a / the / X) noise from the backyard which she had never heard before. She began to feel uneasy.

(55) His wife left him at (a / the / X) time when he needed her very much.

(56) In some countries, (a / the / X) person who steals a loaf of bread could be sent to prison.

(60) English is (a / the / X) subject that he is slightly interested in.

(e) **Commonly Occurring Sequences: COMMON**

(7) A: Where's (a / the / X) coffee? B: It's on the table.

(11) I asked him to go with me. But (a / the / X) first word he said was ' No. '

(21) My room is on (a / the / X) third floor.

(32) Jane is (an / the / X) only person I know at the party.

(f) **Non-Commonly Occurring Sequences: NON-COMMON**

(19) Be careful: there is (a / the / X) glass everywhere.

(22) I have taken part in many competitions but never won (a / the/ X) first prize.

(43) She often dreams of swimming in (a / the / X) beautiful sea off Greece.

(51) A: What do you think of him. B: Honestly speaking I think he is (a / the / X) second-class player.

(g) **OTHERS**

(1) Excuse me, would you pass me (a / the/ X) salt, please?

(2) A: We're going to (a / the / X) town center? Do you want to come with us?: Sure.

(3) It was Sunday. So there was (a / the / X) large crowd in the zoo.

(4) Japan is a country in Asia. (A / The / X)capital is Tokyo.

(5) A: Let's go to (a / the / X) restaurant this evening. B: That' s a good idea. Which restaurant shall we go to?

(6) That's interesting. Actually, this is (a / the / X) funniest story I have ever heard.

(8) A: Stop at the corner. (A /The / X) car might come. B: I don't see any cars, Mom.

(10) Would you like (a / the / X) Japanese tea?

(12) John hasn't got (a / the / X) job at the moment.

(13) A: Could you tell me the way to (a / the / X) city hall? B: Sure. Go along this street for three blocks and ....

(14) I have just seen (a / the / X) play that I can highly recommend to anyone.

(16) A: Why were you late for school today? B: Because (a / the / X) bus was late.

(17) A: How was (a / the / X) winter vacation, John? B: It was really good. I went to Hawaii.

(18) A: Any news about the brutal murder in the newspaper? B: Well, it says that (a / the / X) middle-aged man was arrested this morning.

(20) She was very kind. She gave me (a / the / X) best advice I could get as to the purchase of a house.

(23) A: Did you enjoy the lecture? B: Most of it but I didn't like (a / the / X) jokes.

(24) I had a pleasant time at the party yesterday. (A / The / X) wine was really good.

(27) The biggest problem in the world today is (an / the / X) air pollution.

(28) Most of (a / the / X) European nations are against whale fishing.

(29) I am living in (a / the / X) commercial area of Tokyo.

(30) Jane has a headache, so she' s going to (a / the / X) usual doctor.

(31) Be careful! (An / The / X) oven is still hot.

(33) When we were in Japan, we stayed at (a / the / X) small hotel in Kyoto.

(36) A: Did you see (a / the / X) baseball game yesterday? B: No, I didn't have time to see it.

(38) Look at (a / the / X) sharks. They look very hungry.

(39) A: Do you like to live in (a / the / X) city like this? B: No, not really. I prefer to stay in the country.

(41) We have (a / the / X) reliable information that a terrorist attack is planned next month.

(42) Many tourists are surprised to know that (a / the / X) houses are very expensive in Japan.

(44) A: What are you doing at college? B: I am studying (a / the / X) modern Italian art.

(46) A: Do you want (a / the / X) ticket for the concert next month. I have some. B: Thanks.

(48) A: I saw (a / the / X) totally strange man near Kate's house. B: How scary.

(49) I got into the car. But (an / the / X) engine wouldn't start.

(52) Yesterday I met (a / the / X) girl who graduated from college this spring.

(54) I am studying (a / the / X) modern evolution of the English language.

(57) A: Where is (a / the / X) key, honey? B: It's on the table in the kitchen.

(58) Have a good vacation. Don't forget to send me (a / the / X) postcard.

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